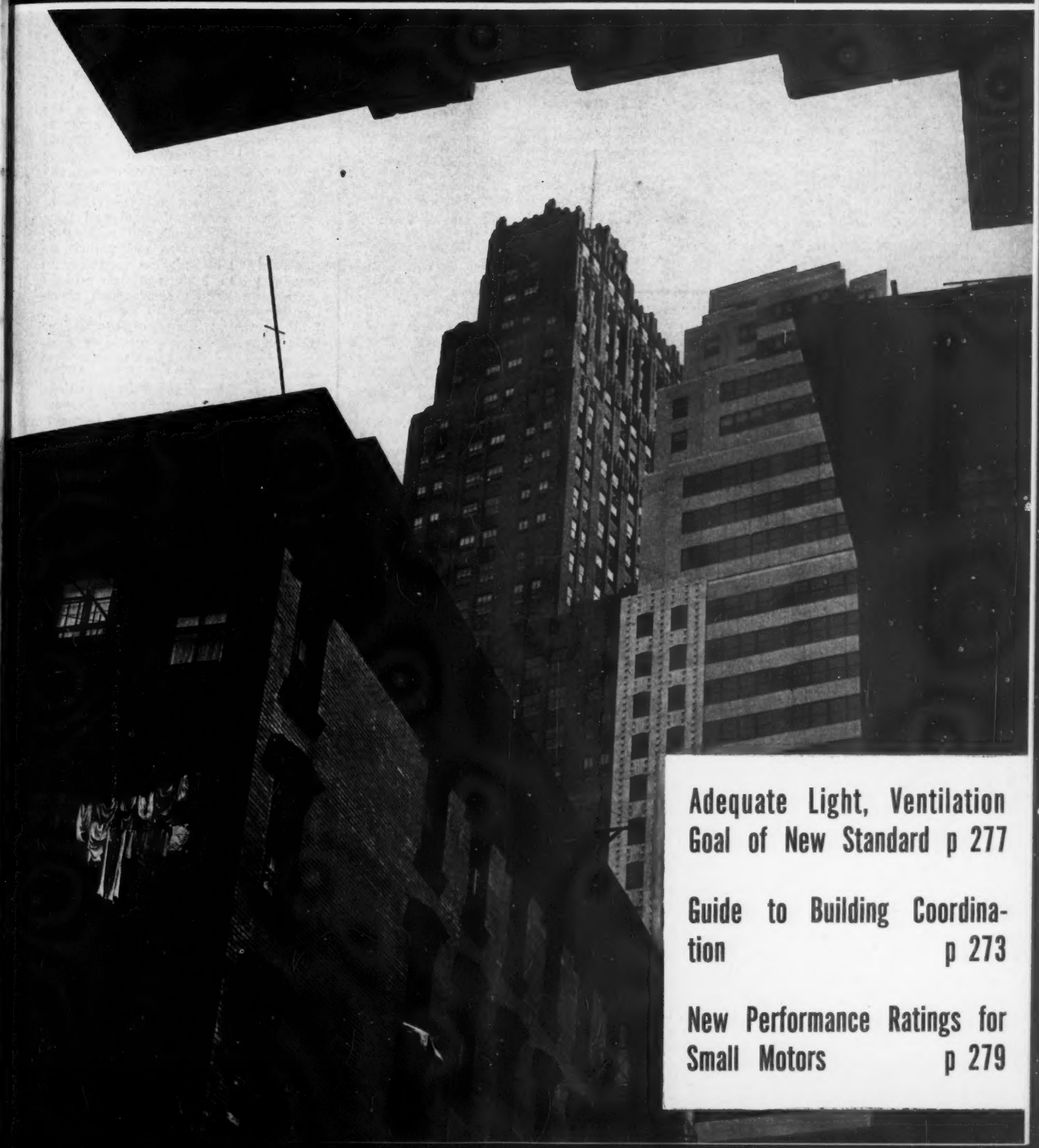
Industrial

November 1946

Standardization



Adequate Light, Ventilation Goal of New Standard p 277

Guide to Building Coordination p 273

New Performance Ratings for Small Motors p 279

American Standards Association

Officers

HENRY B. BRYANS, President
FREDERICK R. LACK, Vice President
P. G. AGNEW, Vice President and Secretary
HOWARD COONLEY, Chairman, Executive Committee
BRIGADIER GENERAL DONALD ARMSTRONG, U. S. Army (Ret.), Assistant to the Chairman of the Executive Committee
CYRIL AINSWORTH, Technical Director and Asst Secretary

Board of Directors

CARL BREER, Executive Engineer, Chrysler Corporation, Detroit, Michigan—Automobile Manufacturers Association
HENRY B. BRYANS, Executive Vice President, Philadelphia Electric Company, Philadelphia, Pennsylvania—Electric Light and Power Group
CLARENCE L. COLLENS, Chairman of the Board, Reliance Electric and Engineering Company, Cleveland, Ohio—National Electrical Manufacturers Association.
E. U. CONDON, Director, National Bureau of Standards, U. S. Department of Commerce, Washington, D. C.—National Bureau of Standards, U. S. Department of Commerce
HOWARD COONLEY, Director, Walworth Company, New York—Manufacturers Standardization Society of the Valve & Fittings Industry
E. C. CRITTENDEN, Associate Director, National Bureau of Standards, U. S. Department of Commerce, Washington, D. C.—Chairman, ASA Standards Council
WALLACE FALVEY, Executive Vice President, Massachusetts Bonding and Insurance Company, New York—National Conservation Bureau
R. E. GAY, President, Bristol Brass Corporation, Bristol, Connecticut—Copper and Brass Research Association
MAX GERTZ, B. Gertz, Inc, Jamaica, New York—Member-at-Large
R. OAKLEY KENNEDY, Ginsberg Machine Company, New York—Member-at-Large
FREDERICK R. LACK, Vice President, Western Electric Company, Inc, New York—Institute of Radio Engineers
JOHN E. LOVELY, Vice President and Chief Engineer, Jones & Lamson Machine Company, Springfield, Vermont—National Machine Tool Builders Association
CLIFTON E. MACK, Director, Procurement Division, U. S. Treasury Department, Washington, D. C.—U. S. Treasury Department
CAROL WILLIS MOFFETT, Paeonian Springs, Virginia—Member-at-Large
HAROLD H. MORGAN, Vice President and Chief Engineer, Robert W. Hunt Company, Chicago, Illinois—American Society for Testing Materials
H. S. OSBORNE, Chief Engineer, American Telephone & Telegraph Company, New York—Past Chairman, ASA Standards Council
WILLITS H. SAWYER, Executive Engineer, New York—American Transit Association
OLE SINGSTAD, Consulting Engineer, New York—American Society of Civil Engineers
GEORGE H. TABER, Jr, President, Sinclair Refining Company, New York—American Petroleum Institute
EVANS WARD, President, Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, New York—American Institute of Bolt, Nut and Rivet Manufacturers
R. E. ZIMMERMAN Vice President, U. S. Steel Corporation, New York—ASA Past President

Standards Council

E. C. CRITTENDEN, Associate Director, National Bureau of Standards, Chairman
L. F. ADAMS, Manager of Standards Division, Executive Department, General Electric Company, Vice Chairman

Chairmen of Correlating Committees

BUILDING—George N. Thompson, Chief, Division of Codes and Specifications, National Bureau of Standards, Washington, D. C.
CONSUMER—Irwin D. Wolf, Vice President, Kaufmann Department Stores, Inc, Pittsburgh, Pennsylvania
ELECTRICAL—C. R. Harte, Connecticut Company, New Haven, Connecticut
MECHANICAL—Alfred Iddles, Vice President, Babcock & Wilcox Company, New York
MINING—Daniel S. Harrington, Chief, Health & Safety Service, U. S. Bureau of Mines, Washington, D. C.
SAFETY—W. R. Smith, Safety Engineer, Public Service Electric & Gas Company, Newark, N. J.

ASA Member-Bodies

Amer Gas Assn
Amer Institute of Bolt, Nut & Rivet Mfrs
Amer Institute of Electrical Engineers
Amer Institute of Steel Construction, Inc
Amer Iron & Steel Institute
Amer Petroleum Institute
Amer Soc of Civil Engineers
Amer Soc of Mechanical Engineers
Amer Soc for Testing Materials
Amer Soc of Tool Engineers, Inc
Amer Transit Assn
Amer Water Works Assn
Assn of Amer Railroads
Automobile Mfrs Assn
Cast Iron Pipe Research Assn
Copper & Brass Research Assn
Electric Light and Power Group:
  Assn of Edison Illuminating Companies
  Edison Electric Institute
Federal Works Agency
Fire Protection Group:
  Associated Factory Mutual Fire Insurance Companies
  Nat Bd of Fire Underwriters
  Nat Fire Protection Assn
  Underwriters' Laboratories, Inc
Heating, Piping and Air Conditioning Contractors National Association
Institute of Radio Engineers
Mfrs Standardization Soc of the Valve and Fittings Industry
Metal Cutting Tool Institute
Nat Assn of Mutual Casualty Companies
Nat Conservation Bureau
Nat Electrical Mfrs Assn
Nat Housing Agency
Nat Lumber Mfrs Assn
Nat Machine Tool Builders' Assn
Nat Paint, Varnish and Lacquer Assn, Inc
Nat Safety Council
Outdoor Advertising Assn of America, Inc
Oxychloride Cement Assn
Photographic Mfrs Group:
  Ansco Division of General Aniline & Film Corporation
  Eastman Kodak Company
  E. I. du Pont de Nemours & Co Photo Products Department
Radio Mfrs Assn
Scientific Apparatus Makers of America
Screw Industry Standards Committee:
  Machine Screw Nut Bureau
  Sheet Metal Screw Statistical Service
  U. S. Cap Screw Service Bureau
  U. S. Machine Screw Service Bureau
Screw Industry Stds Com—(Continued)
  U. S. Wood Screw Service Bureau
Soc of Automotive Engineers, Inc
Telephone Group:
  Bell Telephone System
  U.S. Independent Telephone Association
U.S. Department of Agriculture
U.S. Department of Commerce
U.S. Department of the Interior
U.S. Department of Labor
U.S. Govt Printing Office
U.S. Navy Department
U.S. Treasury Department
U.S. War Department

Associate Members

Amer Assn of Textile Chemists and Colorists
Amer Council of Commercial Laboratories
Amer Gear Mfrs Assn
Amer Home Economics Assn
Amer Hospital Assn
Amer Institute of Architects
Amer Soc of Heating & Ventilating Engineers
Amer Soc of Refrigerating Engineers
Amer Trucking Assn, Inc
Amer Welding Society
Anti-Friction Bearing Mfrs Assn, Inc
Asbestos Cement Products Assn
Asphalt Roofing Industry Bureau
Associated General Contractors of America, Inc
Assn of Iron and Steel Engineers
Committee on Consumer Relations in Advertising, Inc
Compressed Gas Mfrs Assn, Inc
Douglas Fir Plywood Assn
Gas Appliance Mfrs Assn
Grinding Wheel Mfrs Assn
Gypsum Assn
Heat Exchange Institute
Illuminating Engineering Society
Industrial Safety Equipment Assn
Insulation Board Institute
Internat Acetylene Assn
Modular Service Assn
Nat Assn of Finishers of Textile Fabrics
Nat Assn of Wool Mfrs
Nat Elevator Manufacturing Industry, Inc
Nat Federation of Textiles, Inc
Nat Lime Assn
Nat Retail Dry Goods Assn
Red Cedar Shingle Bureau
Research Council of the Academy of Motion Picture Arts and Sciences
Soc of Motion Picture Engineers
Structural Clay Products Institute
Textile Color Card Assn of the U.S., Inc
Veneer Association

Company Members—

Some 2000 Industrial concerns hold membership either directly or by group arrangement through their respective trade associations

Readers Write

Should a Single Materials Specification System Be Established?

Taylor Instrument Companies

Gentlemen: It is quite evident that private firms still feel the need for their own standard specifications to care for individual plant needs and purchasing. This procedure, if properly edited, should cause no hardships to any supplier or user, provided the organizations representing the manufacturers of the raw materials would maintain standards for their products; for instance, the iron and steel makers would agree to maintain a single system of symbols such as AISI to cover all their basic products as regards compositions and physical characteristics (with necessary tolerances). Then all others could write their specifications around these basic materials, adding only such superficial qualifications as satisfy their requirements, but under no circumstances changing the basic materials without agreement by the organization representing the makers.

For some years we have operated on this principle but are forced at times to add several references to equivalent sources, such as AISI, SAE, ASTM, U. S. Navy, or Federal Specifications. This is caused by the parallel specifications in each group. It serves to inform members of our organization that at least it meets the limits of such specifications. Any odd specification requires interpretation by our Metallurgical Department.

Our standard specifications are generally based on some national standard, not only for reasons of economy and procurement, but to notify all our organization what to expect and be governed accordingly. We include superficial requirements such as identification means, simple tests for quality, commercial tolerances, and shipping instructions.

It is obvious that our main handicap in this plan stems from the multiplicity of parallel specifications, so we heartily favor any movement that tends to unify them. I believe that individual standard specifications for materials are quite necessary but they should be written around basic raw material standards. These basic standards must be agreeable to each group of makers whose organization should maintain and publish a single system of symbols covering the specifications of their standard products.

To support this, I recommend that each industry, such as iron and steel, copper, brass, and nonferrous, plastics, etc, concentrate on the problem of unifying their specifications to cover their basic products. This does not mean that they will produce only such materials but rather that the materials constitute their regular standard line and all others will be special. If any special product becomes popular, the organization at the head of the group should arrange to place it in the regular standard line. Likewise, any ma-

terial that requires revision or elimination can be handled in an orderly manner. It will then be up to each private firm, government agency, or others with individual specifications, to be on their toes in keeping their standards up to date with those of the makers. This may best be accomplished by the publication method long used in INDUSTRIAL STANDARDIZATION to keep its membership informed.

If the aviation people find they need specific standards, let the makers' organization establish the basic specification and add it to their regular line with perhaps a key symbol, then it will be available to all. The aviation people, government agencies, or others should create their supplemental standard specifications written around the basic to suit their needs without altering the basic data.

This plan does not regiment any maker since the means to the end and "know how" are left to his discretion as long as he fulfills the basic requirements. The consumer can obtain these basic materials as he desires them but most provide his own alterations by means of supplementary specifications. If enough demand is found for a new basic material there is no reason to prevent its establishment and use, even if only during a war emergency.

The solution apparently lies in the organization, by each group, of an institute to establish a single system of symbols for the specifications of the basic materials made by that group. A coordinating board with representatives elected from each group should be responsible for keeping the groups in their realm and preventing duplication. There must be full cooperation among all groups and consumers for the good of all. No compulsion is required since the basic standards must be supported by their own utility or become obsolete.

M. W. ELMENDORF

X-Ray Code a "First-Rate Job"

St. Luke's Hospital
New York City

Gentlemen: I have read with considerable care the report of the American War Standard Safety Code for the Industrial Use of X-Rays, Z54.1-1946, which you were kind enough to send me. I think it is a first-rate job on a matter of considerable complexity and of great importance, and that it is extremely well done.

FRANCIS C. WOOD, M.D.
Pathological Department

Our Front Cover

Photo by Charles Phelps Cushing. See article, "Adequate Light and Ventilation", page 277.

Industrial Standardization Vol 17 No. 11

Published Monthly by AMERICAN STANDARDS ASSOCIATION 70 E. 45th St., N. Y.

Contents

Building—

Adequate Light and Ventilation Goal of New Building Standard. By Howard Vermilya 277
Standard Module Used in Design of Furniture 269
Acclaim Pioneers' Work on Modular Coordination 272
Contractors Endorse Modular Standards; University Architect Applies Principle 271
New Guide to Building Coordination. Reviewed by W. H. Deacy, Sr. . 273
Plaque for Good Workmanship Given by Plastering Foundation 287

Associations and Government—

Government Issues New Paint Specification 275
National Bureau of Standards Names New Division Chiefs 285
Motion Picture Engineers Celebrate 30-Year Anniversary 276
Institute Adopts Standards for Porcelain Enamel 287
American Welding Society Annual Meeting 287
New Standards in ASA Library 291
Actions on Commercial Standards and Simplified Practice Recommendations 292

Book Marks— 293

Chemical—

Hydrocarbon Compound Samples Prepared 276

Company Standards—

Company Member Committee Discusses Standards Problems 286
Standard Oil Economizes with Standard Containers 284
Uniform Office Methods Proposed by Agencies 285

Consumer—

Manufacturers Accept Clothing Size Standards 278
Retailers Propose Standards for Frozen Foods 290

Electrical—

New Performance Ratings in NEMA Standards for Small Motors 279
How General Electric Has Benefited from Standardization of Motors. By A. W. Bartling 281

From Other Countries—

UNSCC Closes Its New York Office 288
Standards in Latin America. Reported by E. A. Pratt 289
Canada Favors Agreements on Military Equipment 288
Japan Standardizing Textile Machinery 288
BSI Organizing Auto Standards Committee 288
British Encourage Use of Building Standards 289
Ask International Work on Food Containers 290
New Standards from Other Countries 290

Lighting—

Performance Recommendations for Residence Luminaires 289

Safety—

Grinding Wheel Maker Described Safe Methods 285

American Standards Association—

General Eaker to Speak at Dinner at ASA Annual Meeting 276
Coonley Is Named President of New International Standards Body .. 276
MacMillen and Somoff Will Expand ASA Services 286
New Representatives on Standards Council 282
Standards Council Authorizes Two New Projects 283
Organizations Help in National Standards Work 287
ASA Standards Activities 293
Statement of Ownership 294
New American Standards Available 295

November, 1946 Ruth E. Mason, Editor 35 Cents

The American Standards Association is a federation of national groups dealing with standardization. Through it, government, industry, labor, and the consumer work together to develop mutually satisfactory national standards. It acts as the authoritative channel for international cooperation in standardization work.

Subscription price $4.00 per year (foreign $5.00). Special to schools and libraries $2.00 (foreign $3.00). Re-entered as 2nd Class Matter 7/31/43, at the Post Office, New York, N. Y., Act of March 3, 1879.

Richard Garrison; Bloomingdale's

"Module" furniture is planned on a 6-inch scale to insure interchangeability. Here the same basic case is used horizontally and vertically—with the addition of glass doors, wooden half-doors, or full length doors—by means of a small connector.

STANDARD MODULE Used in Design Of Furniture

A REVOLUTIONARY innovation in furniture engineering, based upon the concept of standardization, has produced an unusual type of furniture available to the public this fall. This new and original "module" furniture is designed in terms of a modular unit similar to that now so widely accepted in the building field as a means of coordinating dimensions of building materials and equipment.

Streamlining and simplification are nothing new in the furniture industry; designers, as well as producers, welcome easier methods for the manufacture of complex items. Now, with the application of the modular theory, the use of standardized elements has brought about a flexibility which provides a maximum number of useful end-products with a minimum number of parts.

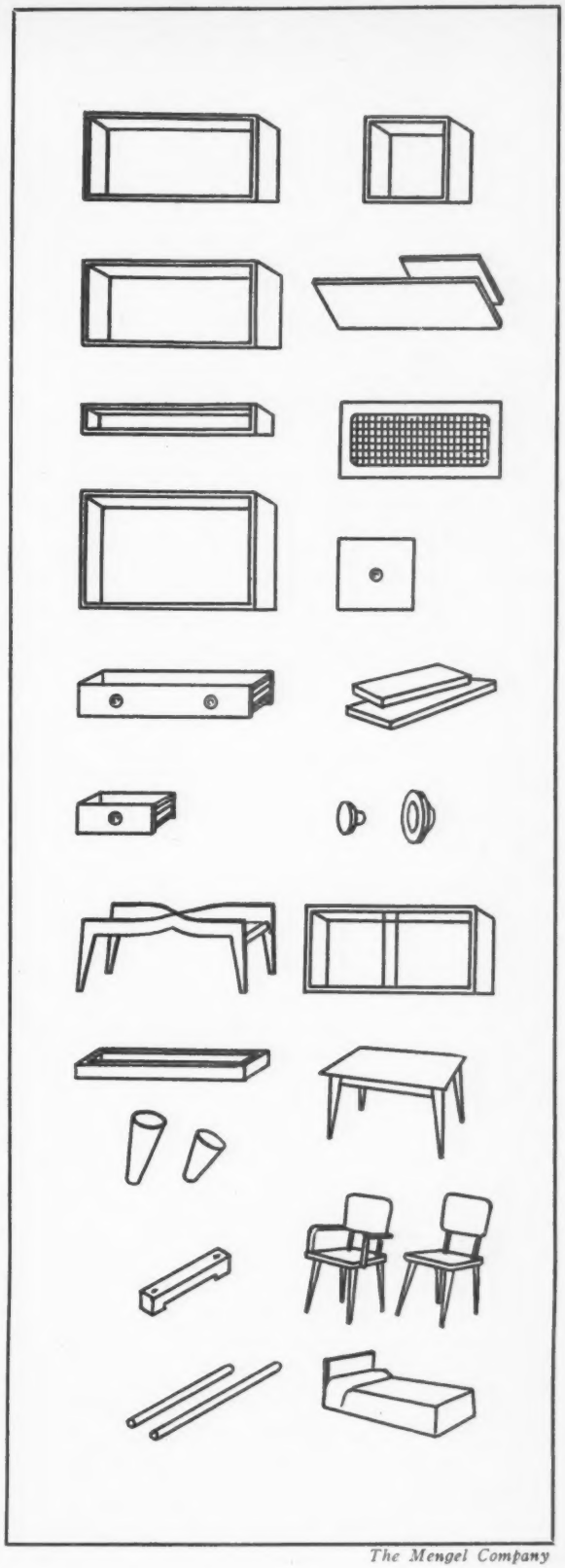
"Module" furniture is designed on a coordinated 6-inch scale so that all pieces are interchangeable. Using the 6-inch measurement as a basis, five principal cases, ranging in size from the smallest 18-inch square to the largest cabinet—36 x 24 x 12, provide the foundation for assembling a wide selection of assorted combinations. Thus, from a limited number of standard pieces, a large variety of different types and sizes of furniture can be put together.

Any of the units may be used horizontally or vertically; in compression or in tension; cantilevered, hung from the wall, the ceiling, or from other pieces. To any of these also may be added drawers or shelves; a flush base; a criss-cross base; long or short tapered legs; grilled, sliding glass, or solid wood doors; or any combination of these parts. Standard separators called "spacer-bracers" help to provide any desired "free space".

By rearranging the units, it is possible to form a breakfront, console, desk, bookcase, vanity, or chest from a similar number of basic parts. Displays at the four stores in New York which, at present, carry the Mengel Module line[1] indicate how countless possible mixtures may be expected to offer a challenge to the consumer's individual creative ability. Each store was supplied with the basic elements and allowed to arrange its own combinations. The result is wide variety, both in size and style.

An outstanding architect himself, Morris Sanders, designer

[1] Mengel Module furniture takes its name from the Mengel Company of Louisville, manufacturers for the entire line.



The Mengel Company

These are the fundamental standard units which, when assembled in varying arrangements, produce an infinite number of types and sizes of "module" furniture. Note the wide selection of basic cases, bases, drawers, doors, shelves, tapered legs, and small connecting units.

Richard Garrison; Gimbels

This shows how a number of cabinets, based upon three of the standard sizes, have been arranged with drawers, shelves, and doors, to yield this desk and bookcase combination.

of the new "module" furniture, is well acquainted with the 4-inch module for building materials and equipment which recently has been commanding international attention. The American Standards Association, as a result of the work on Project A62 for the Coordination of Dimensions of Building Materials and Equipment (sponsored by the American Institute of Architects and the Producers' Council) has already approved three standards[2] using the 4-inch module as a basis for coordination, to be applied to the sizes and assembly of building parts and to the layout of buildings. A suggestion for international adoption of the 4-inch module for building coordination is now before the United Nations Standards Coordinating Committee for consideration.

6-Inch Module More Feasible for Furniture

Although he favors this use of the 4-inch module, Mr Sanders found that the 6-inch unit was more advantageous for the design of his own furniture. First, he explains, most laymen are more familiar with the designation of room measurements in terms of feet and half-feet; a denominator of 4 requires too much calculation.

In addition, 30 inches from the floor is generally considered by decorators to be the proper height for any table. Again, this height is easily divisible by 6 but not by 4. Eventually, however, Mr Sanders hopes to arrive at a point where all of his furniture may be coordinated around a 4-inch basis.

Standard Parts + Precise Craftsmanship = Interchangeability

Unlike most highly standardized products for the consumer, module furniture is, at this early stage in its development, a high-priced quality product. As in the design of women's clothes where the utmost in simplicity demands expert tailoring, so in "module" furniture, precise craftsmanship is essential in order that all pieces will interchange accurately, Mr Sanders explains.

For this reason, too, all accessory items are standardized—the module connector, drawer guide, shelf, sliding glass door, even the smallest hinges, screws, and plastic plugs.

Perfectly spaced holes two inches from each corner serve as bolting points for units. When not needed in that capacity, they may be closed with a plastic plug or used as entrance points for wiring of radios or electric lighting fixtures.

Mr Sanders indicates that "module" furniture may eventually be manufactured in a cheaper wood so that the modular principle will be available to all income groups.

As an aid to the consumer in visualizing a completed room which makes use of "module" furniture, Mr Sanders hopes to develop a home-planning kit, complete with miniature three-dimensional units, including rugs and windows, all scaled on the module.

First Experiments Started Nine Years Ago

The history of "module" furniture may be traced back nine years, for it was in 1937 that Morris Sanders first began to experiment with the idea of interchangeability in furniture. What factors influenced his thinking along this line are an interesting cause for speculation. There are many who may claim that the introduction of the sectional bookcase early in the 1900's was the forerunner of "module" furniture. According to Mr Sanders, however, while it was useful in its time, the

[2] Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945.
Basis for the Coordination of Masonry, A62.2-1945.
Clay and Concrete Modular Masonry Units, A62.3-1946.

sectional bookcase required completely outfitted cases that merely interlocked in compression, thus necessarily limiting it in performance and scope.

Interest in Interchangeability Traced to Eli Whitney's Influence

He prefers to trace his inspiration to a childhood concern with erector sets and to an early interest in Eli Whitney. Says Morris Sanders, "Beyond inventing the cotton gin, it was Whitney who first had the concept and had carried out the reality of the interchangeable manufactured part. In 1800, when he received a rifle manufacturing contract from the government, Whitney devised the first large-scale production and assembly plant the industrial world had ever known. In 1937, I set out to devise furniture based upon Eli Whitney's interchangeable parts principle."

MORRIS SANDERS — prominent architect, designer, and consultant, has applied his talent in many fields, among them, plastics, ceramics, fabrics, glassware, packaging, and the design of homes, hospitals, lighting fixtures, and industrial housing. Associated with the Government during the war, Mr Sanders served as chief of product development for the OPA, plastics development consultant to the Quartermaster General's office, and chairman of the inter-governmental Substitute Container Committee. He is, at present, vice president of the New York chapter of the American Institute of Architects.

Richard Garrison; Gimbels

Left—
As the demonstrator points out, each accessory piece is made in the same standard modular proportion so that it will fit any case.

Richard Garrison; Bloomingdale's

Right—
Miniature modular units are available to the public so that various pieces may be interchanged before a final combination is selected.

Contractors Endorse Modular Standards; University Architect Applies Principle

The Associated General Contractors of America, Inc, announce that the Associaton's Governing and Advisory Boards endorsed the first two standards approved by the American Standards Association under the project on modular coordination of building materials and equipment. The standards are the American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945, and the American Standard Basis for the Coordination of Masonry, A62.2-1945.

The use of modular standards is being applied in designing new buildings for the University of California Los Angeles Branch by its architect, John C. Austin, according to an announcement in a recent issue of the *Architect and Engineer*.

Modular brick samples measuring 11½ x 3½ x 2 3/16 inches have been submitted by Gladding, McBean & Company.

This is only one of many steps being taken to bring modular coordination into greater use. As the system has gained in popularity and practice, some fear has been expressed among architects that it will lead to regimentation within the profession. A member of the Producers' Council, in answering such a query put to him in the *Architect and Engineer*, replied that modular coordination is and can only be a purely voluntary measure dependent upon the support and cooperation of forward-looking architects and producers. "Instead of constricting the genius of the architect, it gives him more time for the actual designing," he said.

Acclaim Pioneers' Work On Modular Coordination

THE pioneering work done by 14 men in developing and promoting the use of modular coordination of dimensions of building materials and equipment was recognized by the American Institute of Architects and the Producers' Council at a luncheon September 26. It was largely due to the efforts of this small group that the modular principle of coordination has now become widely recognized and is being put into effect by architects in designing buildings and by manufacturers in producing building materials and equipment.

The modular system of coordination was first outlined by Albert Farwell Bemis. By using this principle, based on a 4-in. unit or module, a building can be designed so that all materials and equipment used in its construction can be purchased to fit together with little or no cutting or altering at the building site. The program is being put into effect through ASA Project A62, sponsored by the American Institute of Architects and the Producers' Council. Following Mr Bemis' death, his heirs organized the Modular Service Association to carry forward the program that he had started and to help Committee A62 with the technical services it needed. The sizes of clay and concrete masonry units have already been coordinated in an approved American Standard. Work is now under way on standards giving coordinated sizes of wood windows, industrial type of steel windows, glass blocks, and cast stone sills.

The pioneers who have played an important part in bringing the work on modular coordination to its present state of development and who were honored at the September 26 luncheon were:

Albert Farwell Bemis (posthumously) and his family

"For his development and publication of a complete discussion of modular coordination; and to his family and the Bemis Charity Trust for establishing the Modular Service Association to develop and implement his ideas through the provision of technical services essential to the work of Committee A62."

Frederick Heath, Jr (now with the National Housing Agency)

"For his pioneering studies of modular masonry in 1920; for his early perception and energetic promotion of the benefits of modular coordination of all dimensional building materials prior to the formation of Committee A62 of the American Standards Association; and for his extraordinary faith, continued devotion, and personal sacrifices in advancing this movement to its present state of development."

M. W. Adams (Modular Service Association)

"For his services as Executive Secretary of Modular Service Association and Secretary of Committee A62; for his technical competence in solving the manifold problems involved in the coordination of diverse materials; and for his enthusiasm and devotion to this movement far beyond the call of his vocation."

Prentice Bradley (Modular Service Association)

"For his research work beginning in modular coordination; and for the devotion of his outstanding architectural abilities to the development and application of modular coordination as chief technician, writer, and lecturer of Modular Service Association."

Max H. Foley (Voorhees, Walker, Foley, and Smith)

"For his seven years of service as the first chairman of Committee A62, during which his skillful leadership and wise counsel contributed immeasurably to the success of this project."

Frederick G. Frost, Sr (Firm of Frederick G. Frost, architects)

"For his efforts to develop and adapt the graphic method of presenting modular coordination and for his leadership in preparing data in suitable form for use by architects."

A. Gordon Lorimer (Chief Architect, City of New York)

"For his early adoption of modular coordination in his practice as Chief Architect of the City of New York; for his technical contributions and creative suggestions; and for his voluntary and enthusiastic promotion of the benefits of modular coordination to the architectural profession."

Theodore I. Coe (Technical Secretary, American Institute of Architects)

"For his early and long continued interest in modular coordination; for promotion of its benefits to his profession; and for his active participation in developing simplified techniques of practical application in design and construction."

Henry Wright (Managing Editor, Architectural Forum)

"For his authorship of significant articles on modular coordination which greatly broadened interest and participation in this movement and for his competent counsel to the committees on which he has served."

W. M. Steinbauer (formerly Executive Secretary, National Door Manufacturers Association)

"For securing the adoption by his industry of modular coordination of wood window frames and sash, converting ten regional standards to a single national standard; and for the excellence of his educational program to secure industrywide acceptance of modular sizes."

E. W. Dienhart, (Executive Secretary, National Concrete Masonry Association)

"For his leadership of the concrete masonry unit industry in the study of modular coordination and its adoption of modular sizes for its products."

Harry Plummer (Director of Research, Structural Clay Products Institute)

"For his early and continued interest in modular coordination; for his leadership of the structural clay products industry to become the first to adopt modular sizes for its products; and for the excellence of his educational program to introduce the benefits of modular products to the building industry."

W. C. Randall (Chief Engineer, Detroit Steel Products Company)

"For his exhaustive studies of the coordination of steel windows with masonry openings; for his energetic and productive leadership of the steel window industry which resulted in the postwar conversion of its major products to modular sizes; and for his personal efforts to advance this movement in all related fields."

James W. Follin (Managing Director, Producers' Council)

"For his effective promotion of the advantages of modular coordination to all elements in the building industry, and for his diplomacy and executive ability in aiding the progress of this movement throughout his seven years of continuous participation."

Officials of Producers' Council and ASA Presented Awards

Tyler S. Rogers (Owens-Corning Fiberglas Corporation), vice president of the Producers' Council, presided at the luncheon at which the awards were presented. Assisting in the presentation were James R. Edmunds, Jr, president of the American Institute of Architects; L. C. Hart, president, the Producers' Council, Inc; Frederick R. Lack, vice president, and P. G. Agnew, vice president and secretary of the American Standards Association.

New Guide to

BUILDING COORDINATION

A thoroughgoing presentation of the principles and methods to be followed in using the 4-in. module in the coordination of building dimensions; a special aid to architects and engineers in applying modular coordination

Review by W. H. Deacy, Sr

THE *A62 Guide for Modular Coordination* came from the press last month. The new Guide thoroughly covers the subject of modular coordination and is an outstanding contribution for better architecture and economical building. It was prepared by the Modular Service Association under the direction of the American Standards Association Project A62, which is sponsored by the American Institute of Architects and the Producers' Council, Inc.

The objective of the A62 project is the coordination of dimensions of building materials and equipment, "coordination" in this case being defined as harmony in the relation of the sizes of interfitting parts. The basis for the coordination of dimensions, as implied by this definition, comprehends coordinated standard sizes for building parts that permit them to fit together without alteration during erection, coordinated assembly details from which the coordinated sizes have been determined, and coordinated building layout which will correlate the dimensions of the building with these sizes and assembly details. The broad purpose of coordination is to secure in the building industry the economies and simplification which many other industries have realized through better standardization of products and methods. The A62 project has selected 4 inches as the standard module on which this coordination is based.

The authors of the *A62 Guide for Modular Coordination*, Myron W. Adams and Prentice Bradley, have succeeded in producing a comprehensive guide to assist architects and engineers in applying this modular coordination to building plans and details. Any architect or engineer can completely design and detail a structure by following the principles of modular coordination set forth in the Guide.

What the Guide Contains

The foreword of the Guide by M. Edwin Green, American Institute of Architects, chairman of ASA Committee A62, calls attention to the cooperative study of the problem by representatives of the producers and users of building products. With the approval by the American Standards Association of three American Standards,[1] he points out, long-sought principles for the dimensional coordination of building materials and equipment have been authoritatively established. Mr Green particularly emphasizes the usefulness of the Guide to architects and engineers.

The introductory chapter makes clear at once that the architect by his plans, details, and specifications dictates the method by which dimensional coordination may be obtained.

Explains Drawing Procedures and Drafting Symbols Used

Chapter One describes the general method and principles of modular coordination. The drawing procedures and drafting symbols explained in this chapter have been developed by the study committees of Project A62. Specific applications in terms of particular building products and construction are discussed in the subsequent chapters.

Considerable space in the Guide has been devoted to modular masonry. This is in order, because masonry plays a basic part in nearly all construction, and the producers of concrete units, bricks, and other clay units have made much progress in adopting modular sizes. The authors have supplemented the text by many clear and exact drawings showing flexibility in wall lengths and heights, interchangeability, wall openings, and composite walls. Many types of composite walls are detailed but at the same time the innumerable varieties of wall construction now in use throughout the United States have prevented a thorough and expansive presentation of this subject. The description and illustration of the application of modular coordination to nonrectangular layouts are particularly interesting.

Structural facing tile is well handled. The units for this construction conforming to the modular system of sizes have been announced by the industry. The Guide gives practically every condition that might arise in coordinating them with adjacent constructions.

Information on so-called custom masonry as affected by modular coordination is dealt with in detail. Ashlar layout, facings, lintels, jambs, and sills, as well as decorative tiles, are discussed and drawings for many types and conditions shown.

Coordination Problems for Floors Given Special Attention

On account of the various thicknesses of floors necessitated by the stress and strength requirements for various conditions, the subject of floors offers many difficult problems in dimensioning coordination. Diagrams and drawings are shown which

[1] American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945; American Standard Basis for Coordination of Masonry, A62.2-1945; American Standard Sizes of Clay and Concrete Modular Masonry Units, A62.3-1946.

clearly indicate the methods of vertical referencing. Coordination with partitions and exterior walls have been carefully solved. Special floor heights and the conditions which occur by reason of different ceiling finishes are considered and illustrated by drawings in the Guide.

Wood frame construction has been studied, always based on standard lumber sizes as they exist today. Wall layout, floor layout, sections, roof details, rough openings, and masonry veneers have all received some attention by the authors and the usual careful drawings illustrate each point.

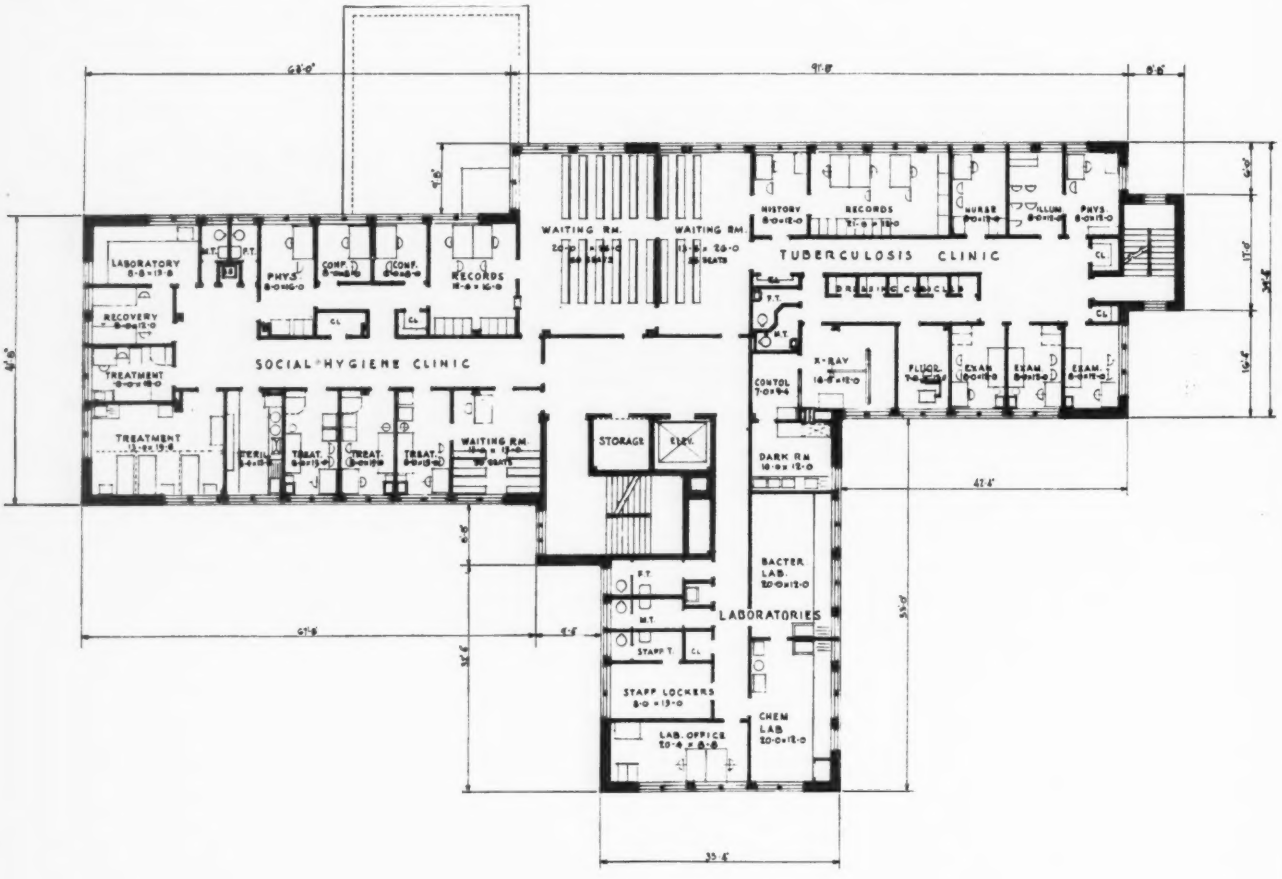
Coordination of Windows and Doors Explained in Detail

Regardless of the great strides in lighting and air conditioning, there are today very few buildings which are windowless. Therefore, because windows will continue to play a big part in building design, the creators of the Guide have spent much effort on window size coordination. The "grid" opening is explained and diagrammed so that even the novice will grasp the essential details. Windows of many types—solid section steel, double hung steel, double hung wood, and casements—are shown with sections through the sill, jamb, and head. The application of modular dimensioning is shown in every case. It might be mentioned here that the window manufacturers of this country have nearly all adopted modular sizes for their products.

No one could consider windows without some attention to their companions—doors. The Guide details size coordination of doors and considers and illustrates metal doors, swing doors, slide doors, and wood doors, both exterior and interior.

Glass Blocks Produced in Modular Sizes Suitable for Coordination

The proportion of space in the Guide devoted to glass blocks might seem out of keeping with the importance that this product holds in the building industry. However, those responsible for the Guide realize that glass blocks are being used to a greater and wider extent every day and they do enter into all forms of wall construction, both exterior and interior. Glass blocks are one of the newer building units, and yet almost from the beginning they have been produced by the manufacturers in modular sizes. Consideration has been given by the authors to certain



SECOND FLOOR PLAN

SCALE:

This sample plan, from page 23 of the Guide, is an illustration of "The Standard Basis"

The Guide explains the principle on which this sample plan was developed as follows: "For preliminary drawings, 4" multiple dimensions are generally satisfactory and expedite their execution. In the sample study shown, all the dimensions are 4" multiples and conform in every respect to a 4" grid layout. These consistent 4" dimensions involve nothing new or restrictive in the preparation of preliminary drawings. As a result of using them at this stage, architects will find that dimensional changes required in the subsequent work are reduced, modular details and modular products have direct application, and the preparation of working drawings is simplified. Normally, no further refinement of dimensions is necessary on drawings submitted to the client."

requirements of the manufacturers as to maximum panel areas for the use of glass blocks. Details and dimensioning of panels in masonry openings, such as poured concrete openings, have been compiled and coordinated. The question of the placing of intermediate supports is analyzed and solved. Panel and window combinations, one of the most important features of glass block construction, are shown as easily adaptable to modular coordination. The use of continuous panels and windows is also illustrated. Other conditions, such as glass block panels in wood frame and brick veneer, panels in partitions, and panel and door combinations are shown and dimensioned.

It would appear that the dimensions of most structural steel shapes and forms lend themselves readily to modular coordination. The Guide devotes a chapter to the skeleton frame touching on such items as column layout, columns in masonry walls, and beam coordination. A typical layout showing the application of modular dimensioning is shown.

Perhaps no single feature in the planning of a structure gives so much trouble as stairs. The Guide shows the coordination of stairs with floor heights and treats of both steel and wood construction.

Working Drawings in Guide Show Application of Modular System

Knowing that a practical application of the modular system of coordinating dimensions would be most enlightening to the architects and engineers, the authors have incorporated in the Guide, in Chapter Twelve, reproductions of actual working drawings. Parts of plans prepared in an architect's office for the erection of a building are shown. A study of these drawings makes it quite clear that fewer rather than more dimensions are used in modular coordination. This should mean considerable saving of draftsmen's time.

There are three appendices to the Guide—A, B, and C. Appendix A is a complete statement of the derivation of the basis. Appendix B consists of a series of reference tables for height coordination. Appendix C reproduces the American Standards already adopted which concern modular coordination. These include:

American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945;
American Standard Basis for the Coordination of Masonry, A62.2-1945;
American Standard Sizes of Clay and Concrete Modular Masonry Units, A62.3-1946.

The book is dedicated to the memory of Albert Farwell Bemis. This is as it should be, for he was the great pioneer in the development of modular coordination.

Work of A62 Committees Produced Results Used in Guide

The authors, in the acknowledgement, credit all those who have contributed to the Guide. The years of work by the committees of ASA Project A62 have produced the results which are embodied in the Guide. The economies and advantages of modular coordination now made available are due primarily to the time given to the project by individual committee members and to the fund of experience and technical knowledge which they have made available.

The preparation of the Guide has been under the able supervision of a subcommittee appointed by Executive Committee A62, consisting of Theodore Irving Coe, technical secretary, the Department of Technical Services, the American Institute of Architects, *chairman*; Albert J. Eldon, architectural representative, Insulux Products Division, Owens-Illinois Glass Company (died February 19, 1946); A. Gordon Lorimer, chief, Bureau of Architecture, Department of Public Works, City of New York; Harry C. Plummer, director of engineering and research, Structural Clay Products Institute; and Alfred Rheinstein, president, Rheinstein Construction Company, Inc.

The assistance of the producing industries in checking the chapters relating to their products and in suggesting useful material is gratefully acknowledged. Acknowledgement is made particularly for the help of Mr Plummer on modular masonry and structural facing tile; F. J. Plimpton, General Sales Agent, the Vermont Marble Company, on custom masonry; W. C. Randall, chief engineer, Detroit Steel Products Company, on metal windows; B. J. Triller, Farley & Loetscher Manufacturing Company, on wood windows; Hal H. Gibson, Jr, engineer, Owens-Illinois Glass Company, on glass blocks; and T. R. Higgins, director of engineering, American Institute of Steel Construction, Inc, on skeleton frame. Also, appreciation is given Frederick Heath, Jr, Owens-Corning Fiberglas Corporation, for his continued help.

Waste and extra cost would seem to be the most baffling problem in all modern building. Modular coordination, as this guide makes evident, lowers building costs. Every architect, engineer, and draftsman should have a copy—not for cold storage space on the library shelf but for practical daily use and reference.

The A62 Guide for Modular Coordination can be obtained from the Modular Service Association, 110 Arlington Street, Boston 16, Massachusetts, or from the American Standards Association, at $10.00 each. This price includes postage if check is sent with the order; otherwise postage will be billed.

Government Issues New Paint Specification

The first Federal Specification for high-grade, semi-gloss enamel paint for general use on interior walls and woodwork has been announced by the Procurement Division. It is expected that the paint will be used extensively throughout the Federal Government, especially in connection with the pending program of the Public Building Administration.

The paint is described as having a soft lustrous finish, excellent color retention, good water and soap resistance, excellent flexibility, good drying, and it makes for easy brushing. It dries dust-free in three to four hours and hard overnight, the Division reports. Because it is more washable than flat paint and yet does not have the high finish of a full gloss enamel, it is expected that it will be particularly useful in hospitals, laundries, kitchens, and bathrooms. It may be used on properly primed walls and ceilings of plaster, wallboard, and similar surfaces, and also on wood and metal.

A step toward improving paints used by the Federal Government, this specification is one of a series contemplated to cover enamels of the synthetic-resin type, including undercoaters, full gloss enamel, and similar high-grade, synthetic, industrial, and architectural finishes, the Procurement Division declares. It may be obtained from the Superintendent of Documents, Government Printing Office, under the designation, "Federal Specification TT-E-508, Interior, Semi-Gloss, Tints and White".

General Eaker to Speak at Dinner At ASA Annual Meeting

The American Standards Association will highlight its annual meeting this year, November 21 and 22, with a dinner on the Starlight Roof of the Waldorf-Astoria Hotel, New York. Lt Gen Ira C. Eaker, Deputy Commanding General, Army Air Forces, will be one of the featured speakers. The subject of his address will be "Two Wars—The Last and the Next". General Eaker was Commanding General of the Eighth Bomber Command in the early years of the war and became Commander-in-Chief of the Mediterranean Allied Air Forces in 1944. He is co-author with General H. H. Arnold of several books on army aviation.

The dinner is scheduled to climax the first two-day Annual Meeting ever held by the Association.

On the agenda for Thursday, November 21, is a meeting of the Standards Council at 10 A. M., a luncheon meeting at 12:30, and a conference of staff executives of ASA Member-Bodies and Associate Members at 2:30. Charles E. Wilson, president of General Electric Company, and chairman of the Policy Committee on Standards, will be one of the speakers at the luncheon meeting.

On Friday, November 22, the Company Member Committee will meet at 10 A. M. and the ASA Board of Directors at 3 P. M.

Motion Picture Engineers Celebrate 30-Year Anniversary

The progress made in the field of standardization in the industry was one of the major achievements cited by the Society of Motion Picture Engineers at its thirtieth anniversary in July.

The Society began its standardization work in October, 1916, by taking up the dimensions of film perforations, frame lines for cameras, and the entire field of production and projection, as well as film exchange practices.

Since that time, the plans and safety specifications for theater projection booths prepared by the Committee on Projection Practice have been officially recognized by being incorporated in the building codes of many states, including New York. More recently the SMPE furnished standard test-film for the Army and Navy which speeded up the production of training films and other wartime motion pictures during the emergency. Many of the War Standard Specifications have been adopted for general peacetime use by both the SMPE and the American Standards Association.

Complete international standardization in both the 35-millimeter and 16-millimeter fields is one of the Society's objectives fast being realized with the cooperation of the American Standards Association, the SMPE announces.

Hydrocarbon Compound Samples Prepared

Ninety different hydrocarbon compounds are now available as standard samples due to the success of a cooperative program undertaken by the American Petroleum Institute Committee on Hydrocarbons for Spectrometer Calibration.

Acting on a request from the Petroleum Industry War Council in 1943, the National Bureau of Standards, together with the American Petroleum Institute Advisory Committee on Fundamental Research on the Composition and Properties of Petroleum, effected a method of coordinating the facilities of various industry, university, and government laboratories, in order to speed up the preparation of finished hydrocarbon standards. The API Committee on Hydrocarbons for Spectrometer Calibration was the result.

Details of the work will be given in scientific papers which will be published shortly. In the meantime, petroleum laboratories desiring information should send their inquiries to the American Petroleum Institute, 50 West 50th Street, New York 20, N. Y. All others may contact the National Bureau of Standards, Washington 25, D. C.

Coonley Is Named President Of New International Standards Body

A cable received as this issue of INDUSTRIAL STANDARDIZATION goes to press announces that Howard Coonley, chairman of the Executive Committee of the American Standards Association, has been elected president of a new "International Organization for Standardization" created at an international meeting at London. Representatives of 23 national standards associations attending the London meeting are taking final steps to coordinate the former International Federation of National Standardizing Associations (ISA) and the wartime United Nations Standards Coordinating Committee into a single international association for postwar work on standards.

Details of the actions taken at the London meeting will be given in our December issue.

Adoption of the new building code specifying how buildings should be spaced in relation to their height and including requirements for yards and courts is expected to prevent overcrowding such as this and to assure adequate light and air. Here, the courtyard is the tenant's front yard.

Photo by Charles Phelps Cushing

Adequate Light and Ventilation

Goal of New Building Standards

By Howard Vermilya

Pressure for building programs to meet urgent need for new homes may result in construction of slum-like areas unless adequate building standards are followed

CONSIDERED as one of the subdivisions of building codes, light and ventilation as we know the subject today is probably the baby of the family of modern building regulations in point of age of major developments.

That this should be so is not strange when we consider that the early law makers in the building field were so occupied with measures to keep their buildings from falling and their cities from burning down that it was not until this situation had been corrected somewhat that they were able to give attention to health matters which had in the meantime been forceably brought to their notice by plagues and pestilences. Thus we find that King Hammurabi, the patron saint of code writers, who was otherwise quite modern in his thinking on such matters as jerry building and the treatment of returned veterans, appears not to have been sufficiently concerned about light and ventilation to include regulations on this subject in his code of some forty centuries ago.

Nevertheless, from the information available to us it appears that the matter of light at least has been given some attention down through the ages. This attention, as in modern zoning ordinances, was largely directed toward making light available to buildings, although random references are found to ancient laws concerning windows. At least twenty centuries ago the Roman law recognized the right of the people to enjoy light in their houses without interference from neighboring buildings. In England this right was established in about the twelfth century and

Howard Vermilya, *chairman of the ASA sectional committee which prepared the new American Standard Building Code Requirements for Light and Ventilation, is director of the Housing Research Division, John B. Pierce Foundation, Raritan, N. J. Until recently, Mr Vermilya was director of the Technical Division, National Housing Agency.*

somewhat later became statute law. Here, as in Roman times, the remedy for violation of such rights was usually by compensation to the injured party or demolition of the offending building.

Building Code May Be Only Legal Control of Light, Ventilation

Legal control of light and ventilation in our time is usually maintained by zoning ordinances, state or local housing laws, tenement house acts, and state and local building codes. These several types of laws supplement one another in some localities and in others may operate independently. The zoning ordinance establishes requirements for all types of buildings and is intended to make light and air available to buildings on the exterior. Housing and tenement house laws, as the names imply, are concerned only with residential occupancy and are intended to secure proper living conditions in dwellings. The building code, however, quite commonly is the only regulation in effect in many communities to provide any control over light and ventilation and hence, so far as possible, must take the place of each of the other instruments.

The American Standard Building Code Requirements for Light and Ventilation, developed by a sectional committee of the American Standards Association under the sponsorship of the National Housing Agency and the U. S. Public Health Service, and recently approved by the ASA, has been developed with that purpose in mind. Its requirements for yards, courts, and the spacing of buildings on the same lot or plot in relation to their heights are intended to insure that adequate amounts of light and air will be made available to all buildings. Having thus made light and air available to the building the requirements go on to relate window area to floor area so as to insure the admission of adequate amounts of such light and air to the interior of rooms.

Windows are required only in habitable rooms, that is, rooms in a dwelling unit that are used for general living purposes. Rooms in other types of occupancy have the option of natural light and ventilation or artificial light and mechanical ventilation, thus giving recognition to modern developments in windowless factory and office buildings. The required window area is expressed as a percentage of floor area, but attention is called in the appendix to the variation in average brightness of the sky for different regions and latitudes in the United States which may justify some increase or decrease in this percentage depending on the location. However, although the sky brightness may vary, ventilation requirements will not vary for the same reason, so that any adjustment of window area should bear this in mind. Artificial light and mechanical ventilation being outside the scope of this committee, no requirements on these subjects have been included in the standard.

The standard provides requirements for the lighting and ventilation of public hallways and stairways, and includes provisions for size and arrangement of habitable rooms. These latter provisions are of special importance at this time when, due to the housing shortage, all sorts of accommodations are being offered as homes. The pressure of high construction costs, high land costs, and a fantastic demand has led to an inevitable squeeze on the home seeker, the net effect of which is to reduce what he gets for his money in terms of space. The provisions dealing with arrangement of rooms to insure privacy in respect to bedrooms and bathrooms is somewhat less directly related to light and ventilation than is the matter of room sizes, but it is an important step in the direction of better planned homes. Moreover, it is the type of good housing standard which unless written into the law is likely to be disregarded when costs are high and there is a tendency to economize on space.

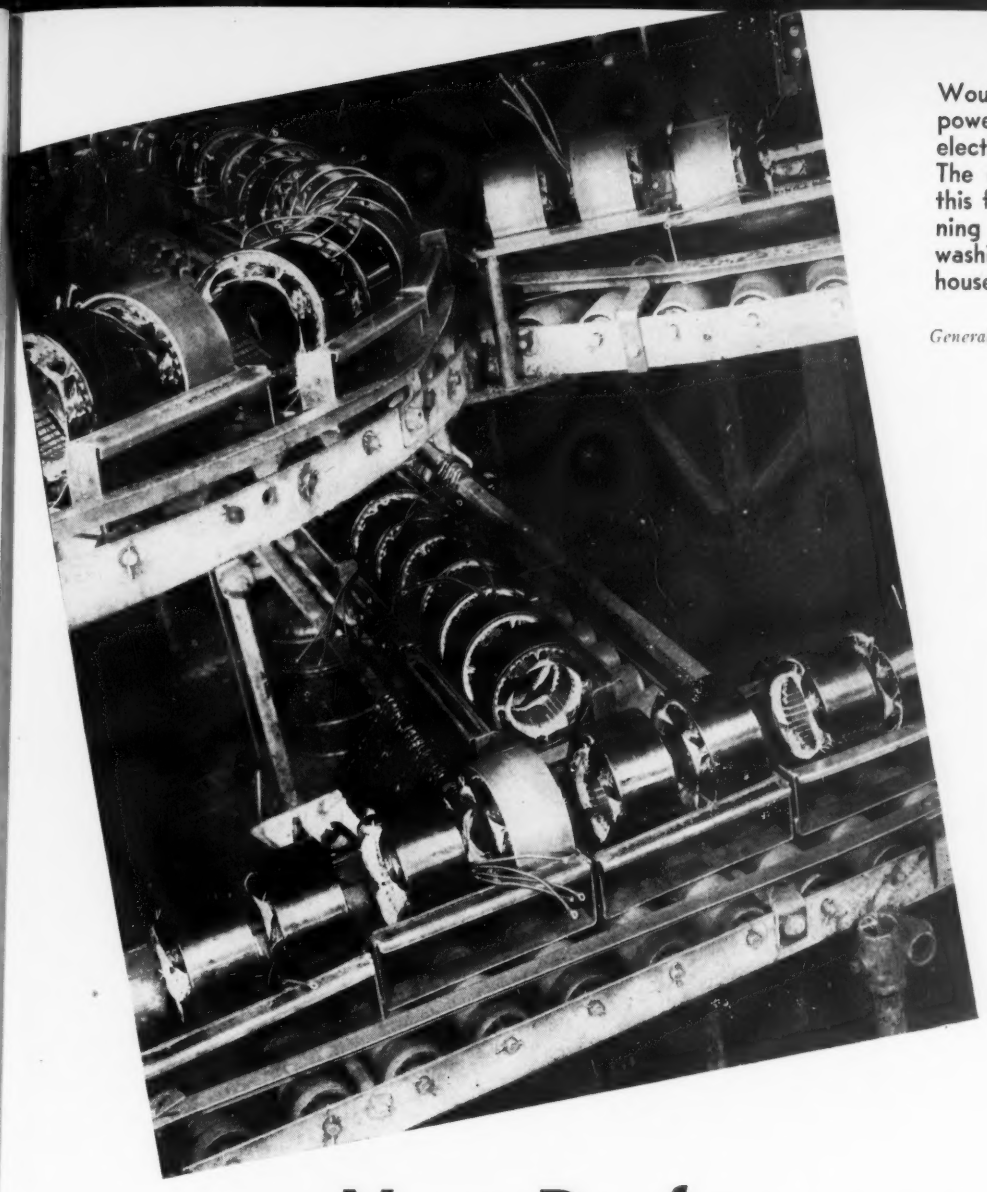
Cities are now in grave danger of having great slum areas constructed in the guise of housing returned veterans unless adequate standards are applied. Such developments may put a roof over the veteran's head but at the same time condemn him to years of living under substandard conditions. The ultimate costs of such developments can only be analyzed in terms of their ultimate effect on the veterans and their families, and the costs to the city of maintaining such areas. It is well for every community to consider these facts before permitting the uncontrolled development of suburban areas. The fact that the new American Standard has now been issued is particularly timely in this connection.

The American Standard Building Code Requirements for Light and Ventilation, A53.1-1946, was prepared by an ASA sectional committee under the sponsorship of the Federal Security Agency, Public Health Service, and the National Housing Agency. Copies are available from the American Standards Association at 45 cents each.

Manufacturers Accept Clothing Size Standards

More than 200 manufacturers of infants' and children's apparel have declared their intention of adopting the standard system of clothing sizes developed by the National Bureau of Standards, the *Regional Commerce Bulletin* of the U. S. Department of Commerce announces.

Published as one of a coordinated series of standards now being prepared to cover all classifications from infants and babies to 'teen age girls and boys, this Recommended Commercial Standard on Body Measurements for the Sizing of Apparel for Infants, Babies, Toddlers, and Children was issued in August 1945 as TS-4000. Its scope covers classifications and size ranges, size designations, certain composite body measurements, lengths of garments, methods of measurements to the sizing system, recommended methods of certification and labelling, and an explanation of adjustment made in body measurements all relating to infants', babies', toddlers', and children's ready-to-wear apparel.



Wound stators for fractional horsepower motors on conveyors in a big electrical manufacturing company. The motors of which stators such as this form a part will be used for running vacuum cleaners, refrigerators, washing machines, and many other household electrical helps.

General Electric Co

New Performance Ratings

In NEMA Standards for Small Motors

National Electrical Manufacturers Association announces broad new standardization program for fractional horsepower motors; defines rating and performance by coordinating horsepower rating, speed, breakdown torque, and service factor

A BROAD new program of standardization for fractional horsepower motors, designed to reduce production costs, insure efficiency and proper application, and result in long-term savings to customers, has been announced by the Motor and Generator Section of the National Electrical Manufacturers Association.

The use of small motors in household appliances—in washing machines, coal stokers, oil burners, and cellar drainers, to name only a few—as well as in a wide variety of industrial applications, is expanding rapidly. The new NEMA standards are expected, therefore, to be of great importance to many allied manufacturing groups, as well as to application engineers, electrical contractors, power suppliers, and others, in appraising motor performance.

The first standards to be completed

Table I

Small power single-phase induction motors shall be rated primarily on the basis of breakdown torque. The value of breakdown torque for the purpose of defining horsepower rating shall fall within the following ranges:

	Revolutions Per Minute					
Synchronous	3600	3000	1800	1500	1200	900
Approx Full Load	3450	2850	1725	1425	1140	850

Brake hp Rating	Breakdown Torque, Oz-Ft					
1/20	2.0-3.7	2.4-4.4	4.0-7.1	4.8-8.5	6.0-10.4	8.0-13.5
1/12	3.7-6.0	4.4-7.2	7.1-11.5	8.5-13.8	10.4-16.5	13.5-21.5
1/8	6.0-8.7	7.2-10.5	11.5-16.5	13.8-19.8	16.5-24.1	21.5-31.5
1/6	8.7-11.5	10.5-13.8	16.5-21.5	19.8-25.8	24.1-31.5	31.5-40.5
1/4	11.5-16.5	13.8-19.8	21.5-31.5	25.8-37.8	31.5-44.0	40.5-58.0
1/3	16.5-21.5	19.8-25.8	31.5-40.5	37.8-48.5	44.0-58.0	58.0-77.0
1/2	21.5-31.5	25.8-37.8	40.5-58.0	48.5-69.5	58.0-82.5	—
3/4	31.5-44.0	37.8-53.0	58.0-82.5	69.5-99.0	—	—
1	44.0-58.0	53.0-69.5	—	—	—	—

Note 1. Breakdown torque range includes the higher figure, down to, but not including, the lower figure.

under this new NEMA program provide specific definitions of motor rating and performance in coordinated terms of horsepower rating, speed, breakdown torque, and service factor.

Previously there had been no adequate standard to define horsepower rating in terms of speed and torque and therefore the horsepower stamped on a fractional horsepower motor nameplate has not always been a true indication of the motor's load-carrying ability. Because of this lack of uniformity in rating, the motor of one manufacturer might drive a machine, while a motor of the same type and horsepower rating of another manufacturer might fail to operate it satisfactorily. This was explained by L. C. Spoor, vice chairman of the Fractional Horsepower Subdivision of the Motor and Generator Section of NEMA, in announcing the new standards. As a result, he declared, the manufacturer who used small power motors as a component of his product was constantly required to test each manufacturer's motors on his device in order to determine their suitability for his application.

In formulating the new standards, the motor manufacturers believed that a clearly defined and generally accepted method of evaluating motor performance was essential in order to assure intelligent design, manufacture, and use of small motors. The fundamental points covered in the new standards include not only the new basis of rating, but also previously standardized locked rotor and starting currents of motors.

The use of the new standards will make it possible for the motor user to be sure that the stamping on the motor nameplate is an accurate designation of the article he is purchasing and thus he will obtain increased return on motor investments through proper application, freedom from motor trouble, and longer motor life, Mr Spoor explained. The machinery or appliance manufacturer, for example, can obtain proper motors from all suppliers without having to go through exhaustive engineering tests for each application or make of motor. This is also important from the standpoint of the ultimate purchaser of the washing machine, coal stoker, or oil burner in which the motor is used, since he has to make a sizeable investment and expects performance and long life from the appliance.

The standards likewise are expected to be helpful to the electrical contractor who often makes application recommendations and who has to install the proper size and type of wiring, operating, and protective equipment.

The standards for rating fractional horsepower motors represent the first phase in the new program of fractional horsepower motor standardization. They will be followed later this year by dimensional standards and application standards. Standards for motors for special uses will be released in November and December, Mr Spoor announced.

These NEMA standards are not mandatory, but it is expected that they will be widely used because of the advantages to all concerned.

The value of standardization as a key factor in obtaining optimum performance and maximum production efficiency has been recognized by motor manufacturers virtually since the inception of the business, Mr Spoor declared. Standardization in the general motor field was initiated as early as 1908, he said, and over a period of years has proved to be a powerful factor in establishing high quality products and reducing over-all costs. One example he cited was the case of motors made for washing machine manufacturers where, through effective standardization, prices were reduced more than 50 percent between 1923 and 1941, while the volume of standard motors produced was increased several times.

During the war, he explained, the demand for small motors showed a phenomenal increase, and the backlog of demand today is among the heaviest of all electrical products. Prior to the all-time peak demand brought on by the war and the existing need for appliances, he said, many special lines of motors were built according to individual specifications, resulting in multiplicity in design and confusion in application, which tended to reduce quantity output compared to that which might be produced under a broad plan of standardization. The tremendous shortage of motors was one of the determining factors in developing standards which would facilitate maximum production, Mr Spoor said.

In a detailed explanation of the new standards, the National Electrical Manufacturers Association explains the basis of rating fractional horsepower motors as follows:

Horsepower Rating in Terms of Breakdown Torque

In the application of fractional horsepower induction motors, the motor should be selected with a breakdown torque which is sufficient to take care of the maximum peak load requirements of the application. Breakdown torque is the maximum torque which the motor will develop without an abrupt change in speed. In order that the new standards would be inclusive and serve to provide a definition of rating of any particular motor design, the complete range of breakdown torque was divided into bands for the various standard horsepower ratings. Such a series of torque values associated with corresponding horsepower rating provides a definite classification of any motor in terms of horsepower ratings.

The values shown in Table 1 are the newly adopted NEMA standards for breakdown torque of single-phase fractional horsepower motors.

Load-Carrying Ability in Terms of Service Factor

Fractional horsepower motors of the open 40 C rise continuous rating, referred to as General Purpose Motors, have a lower temperature rise rating than certain motors designed for specific duty and load conditions which are rated 50 C rise (open) or 55 C rise (totally enclosed). These temperature rises are recognized by industry as the maximum compatible with long insulation life.

The users of fractional horsepower motors, when applying open 40 C rise motors on specific applications and known load conditions have recognized that these motors may be safely operated continuously at loads greater than the horsepower rating on the nameplate. It became apparent that motor users desire recommendations from the motor manufacturers regarding the safe continuous overloads which would give the maximum safe operating temperatures of the open 40 C rise motors, considering the inherent 10 C margin of safety of these motors. This inherent overload ability is referred to as Service Factor.

Fractional horsepower motors, due to their physical size and value of breakdown torque related to full load torque, as compared with motors of larger rating, have a higher overload ability than indicated by 1.15 service factor of the larger ratings.

Table 2

Hp	Service Factor for General Purpose 40 C Induction Motors
1/20	1.4
1/12	1.4
1/8	1.4
1/6	1.35
1/4	1.35
1/3	1.35
1/2	1.25
3/4	1.25
1 at 3600 rpm only	1.25

The service factors, recently adopted as standards by NEMA, and given in the table below, have been determined to define the loading that will give a total temperature rise of 50 C on a general purpose fractional horsepower motor having 40 C rise at the nameplate rating.

Table 3

Rated Horsepower	Locked-Rotor Current in Amperes	
	115 Volts	230 Volts
1/6 and smaller	20	10
1/4	23	11.5
1/3	31	15.5
1/2	45	22.5
3/4	61	30.5

The temperature rise on which the nameplate rating is based shall be no more than 40 C for all coil windings. This low limiting temperature rise is provided to allow a greater factor of safety where the service conditions are unknown.

When authorized by the manufacturer, such a motor may be operated (at rated voltage and frequency and in an ambient temperature not exceeding 40 C) at a continuous load greater than rated load determined by the above service factors.

It is recommended that the service factor shall be marked on the nameplate in addition to the rating.

It will be noted that these service factors go up as far as 1.4 which means a 40 C motor having a 1.4 service factor may be operated at 140 percent load continuously.

Starting Current Limits

The maximum locked-rotor current standard is not new, having been adopted by NEMA several years ago. The standard provides that the locked-rotor current of 60 cycle, single-phase motors, (900-3600 rpm range) of any type, except those split-phase motors at present used on washing machines and ironing machines, shall not exceed the values given in Table 3.

The NEMA standards list code letters to designate the starting current in terms of "locked kva per horsepower" as shown in Table 4.

Table 4

Code Letter	Kva per Horsepower*
A	0 — 3.15
B	3.15— 3.55
C	3.55— 4.0
D	4.0 — 4.5
E	4.5 — 5.0
F	5.0 — 5.6
G	5.6 — 6.3
H	6.3 — 7.1
J	7.1 — 8.0
K	8.0 — 9.0
L	9.0 —10.0
M	10.0 —11.2
N	11.2 —12.5
P	12.5 —14.0
R	14.0 —and up

* Locked kva per horsepower includes the lower figure, up to but not including the higher figure.

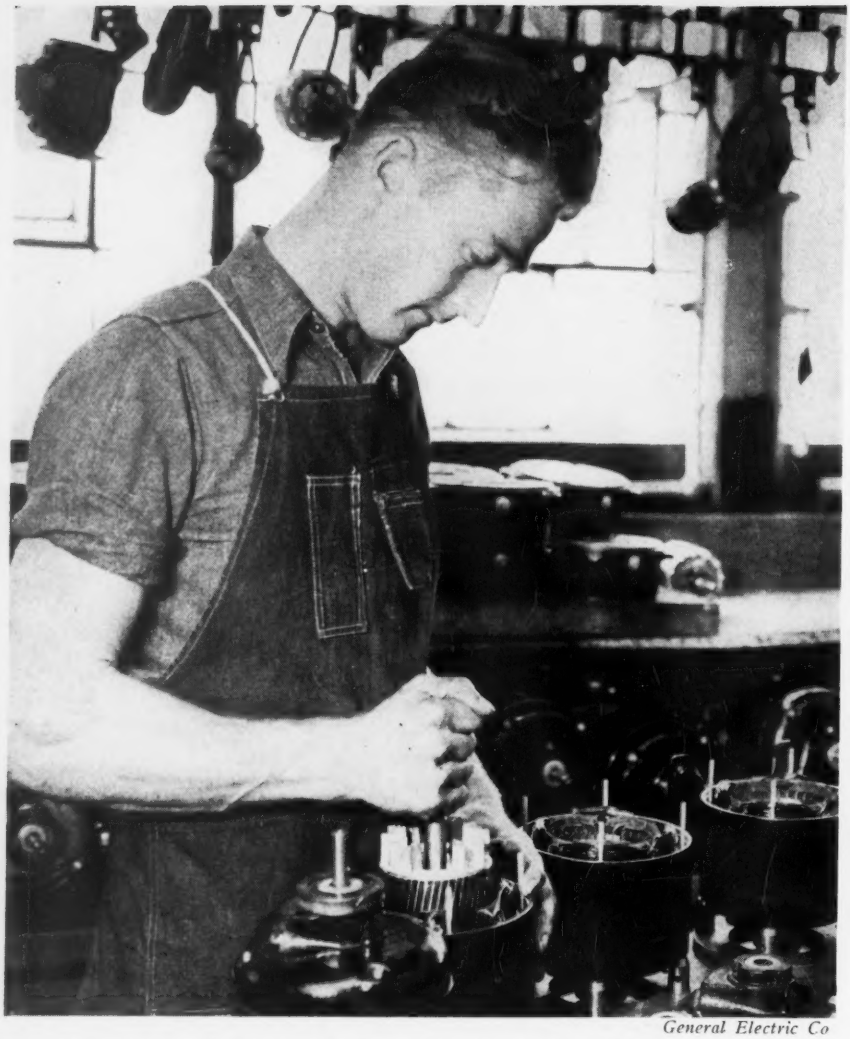
The recent standardization extends the stamping of the National Electrical Code letter on the motor nameplate of fractional horsepower motors to 1/20 hp rating. This provides a marking from which can be determined the actual starting current and provides a check as to the motors in conformance with the standard for locked-rotor current. This is of value to suppliers of control equipment and power suppliers.

How General Electric Has Benefited From Standardization of Motors

By A. W. Bartling

Manager, Fractional Horsepower Motor Division, General Electric Company

Prior to the war, the General Electric Company manufactured oil burner motors in one frame diameter of 2,450 different models all differing one from the other, and employing 35 different end flange brackets used for mounting the motor to the oil burner. This condition in general also had to exist with other motor manufacturers if they were to supply motors for the oil burner industry. One can imagine the multiplicity of



General Electric Co

Squirrel-cage rotor being inserted in stator for fractional-horsepower washing machine motor.

manufacturing equipment, extra floor space, and paper work necessary to produce motors under these job shop conditions.

Number of Models to Be Reduced to 12 by January 1

Today, as a result of a program of standardization by General Electric of their oil burner motor, using a previous NEMA standard of the end-bracket mounting dimension, the variety of active oil burner motor models produced by General Electric has been reduced to 17, including special voltages and frequencies required, and we further intend to reduce the active models to 12 by January 1, 1947. Such an accomplishment could only have been made through the cooperation of the oil burner industry and through improvements that oil burner manufacturers have made in their products over the last decade.

This reduction in variety of motors produced by General Electric to serve one purchaser industry makes it possible to depart from job shop practice, and build motors on a regular high-volume production schedule, resulting in more even flow of material, better utilization of machine tools, better control of quality, and as a result more motors per square foot of available floor space. More motors mean more furnaces more refrigerators, more washers, etc, and thus benefit the entire national economy.

More Goods for More People At Less Cost

We feel in our company that standardization means more goods for more people at less cost; and everyone along the line from suppliers of component motor parts to ultimate motor user will derive a proportional share of these benefits.

New Representatives on Standards Council

New representatives have been appointed by several of the Member Bodies who are members of the Standards Council. Since the Council is in charge of all ASA technical work, these representatives will be called upon to participate in decisions concerning initiation of new projects, membership of technical committees, and approval of standards. Those appointed are listed below.

American Iron and Steel Institute—

Karl Fetters, general metallurgist of the Youngstown Sheet and Tube Company, will replace W. R. Williams as alternate.

Metal Cutting Tool Institute—

C. M. Pond, vice president, Niles-Bement-Pond Company, Connecticut, appointed to serve as representative of the MCTI, also acts as its liasion officer in other ASA affairs. He is a member of the Mechanical Standards Committee; the Sectional Committees on Standardization and Unification of Screw Threads, B1, and Allowances and Tolerances for Cylindrical Parts and Limit Gages, B4; as well as a member-at-large on ASA Sectional Committees on Pipe Thread, B2, and Standards for Small Tools and Machine Tool Elements, B5.

H. C. Hungerford, secretary of the MCTI, serves as Mr Pond's alternate. He is also an alternate on the Mechanical Standards Committee of the ASA and a representative on the Sectional Committees on Standardization and Unification of Screw Threads, B1; Standards for Small Tools and Machine Tool Elements, B5; Wire and Sheet Metal Gages, B32; and Classification and Designation of Surface Qualities, B46.

National Housing Agency—

William V. Reed, director of the Technical Branch of the National Housing Agency, also represents his organization on the ASA Sectional Committees on Building Code Requirements for Light and Ventilation, A53; and Coordination of Dimensions of Building Materials and Equipment, A62.

U. S. Treasury Department—

Rear Admiral Ellis Reed-Hill, Coast Guard, succeeds Rear Admiral Harvey F. Johnson for his unexpired term.

U. S. War Department—

Lieutenant Colonel James B. Carvey replaces Lieutenant Colonel William Little for his unexpired term.

Standards Council Authorizes Two New ASA Projects

THE Standards Council of the American Standards Association at its meeting September 12 initiated two new projects, on identification of antifriction bearings and, on women's industrial clothing, sent several new and revised standards to letter ballot for final approval, and heard reports showing expansion of the Association's work.

Cooperation with Department of Commerce—

One of the reports presented at the meeting indicated increasing cooperation between the U. S. Department of Commerce and the American Standards Association. Two meetings of the Conference Committee of the Department of Commerce and the ASA have now been held, Cyril Ainsworth, technical director and assistant secretary of ASA, reported. Development of consumer standards and methods of speeding work on building codes and standards were the principal subjects discussed.

The Department of Commerce has expressed its interest in assisting the national standardization program through economic and technical research which possibly could be carried on through the National Bureau of Standards and other bureaus of the Department. It has asked for suggestions and the ASA has been able to propose a number of technical research projects which could be conducted at the National Bureau of Standards.

The Conference Committee was organized as a result of recommendations made by then Secretary of Commerce Henry Wallace to Charles E. Wilson, chairman of the Policy Committee on Standards. The intention is that it shall consider the entire field of standards from the point of view of the Department of Commerce and the ASA.

Amendment to ASA Constitution—

A proposed amendment to the constitution of the American Standards Association is now before the Member-Bodies for action, E. C. Crittenden, chairman of the Standards Council, reported. This amendment would make it possible to delegate the approval of standards to a Board of Review and thus help to speed the work as well as relieve the Standards Council of some of its present burden. The amendment has been approved by the Board of Directors.

Reaffirmation of Standards—

The Board of Examination, to which all miscellaneous standardization projects are referred for review before action by Standards Council, has authority to reaffirm standards which are not within the jurisdiction of a correlating committee, the Standards Council decided. This makes it possible for all approved American Standards to be reviewed and reaffirmed, or referred to a sectional committee for revision. ASA procedure calls for review of all approved American Standards at the end of three years.

New Projects Initiated—

Two new projects will now go forward under the procedure of the American Standards Association—one on women's industrial clothing and the other on identification of anti-friction bearings.

The new project for the development of American Standards for Women's Industrial Clothing, under the sponsorship of the Associated Manufacturers of Washable Service Apparel, is expected to consider the four American War Standards for women's industrial clothing approved by ASA during the war. The new project was authorized by the Standards Council on request of the Advisory Committee on Ultimate Consumer Goods.

The project for the development of a standard identification system for antifriction bearings will be developed by a sectional committee working under the supervision of the Mechanical Standards Committee. This decision was made by the Standards Council after a general conference agreed that a common numbering system is needed and recommended that work be undertaken by an ASA sectional committee. The project was requested by the Secretary of the Navy who suggested that the numbering system set up by the Navy be considered.

Standards Sent to Letter Ballot—

Three standards defining filling materials for bedding and upholstery to help in bringing about uniformity in state labeling regulations and in enforcing requirements for sanitation were sent to letter ballot of Standards Council on recommendation of the Advisory Committee for Ultimate Consumer Goods.

A new edition of the Building Exits Code, revising the 1942 edition, was presented to the Standards Council by the Building Code Correlating Committee and was sent to letter ballot for final vote.

Three standards submitted for approval by the American Society for Testing Materials were sent to letter ballot. All three are revisions of 1945 editions:

- American Standard Specifications for Free-Cutting Brass Rod and Bar for Use in Screw Machines (ASTM B16-45; ASA H8.1-1945)
- American Standard Specifications for Copper Water Tube (ASTM B88-45; ASA H23.1-1945)
- American Standard Specifications for Copper-Base Alloy Forging Rods, Bars, and Shapes (ASTM B124-45; ASA H7.1-1945)

A revision of the 1939 edition of the American Standard for Involute Splines, Side Bearing (B5.15-1939) was sent to letter ballot on recommendation of the Mechanical Standards Committee.

New Sponsors—

The Metal Cutting Tool Institute was approved as a new joint sponsor for the ASA project on Small Tools and Machine Tool Elements, B5. The Institute now joins the American Society of Mechanical Engineers, the National Machine Tool Builders' Association, and the Society of Automotive Engineers in responsibility for the success of the sectional committee's work on standardization of machine tool parts.

The Bureau of Mines and the Navy Department have been invited to serve as sponsors for the project on Safety Code for the Protection of Heads, Eyes, and Respiratory Organs of Industrial Workers, Z2, the Safety Code Correlating Committee reported. The National Bureau of Standards has been sole sponsor up to the present time.

The American Society for Testing Materials has become a member of the Safety Code Correlating Committee. The ASTM had asked for membership on the Committee because of its interest in such safety standards as the American War Standard on Linemen's Rubber Protective Equipment, J6.

Standard Oil Economizes With Standard Containers

THE application of standardization to one particular area of the over-all packaging problem of the Standard Oil Company of California effected a reduction in the number of basic container types and sizes used for distribution from a total of 46 to 28, reports *Good Packaging*.

This was only a part of the numerous savings in container costs and in the maintenance of package containers which resulted when the company instituted a recent package modernization program.

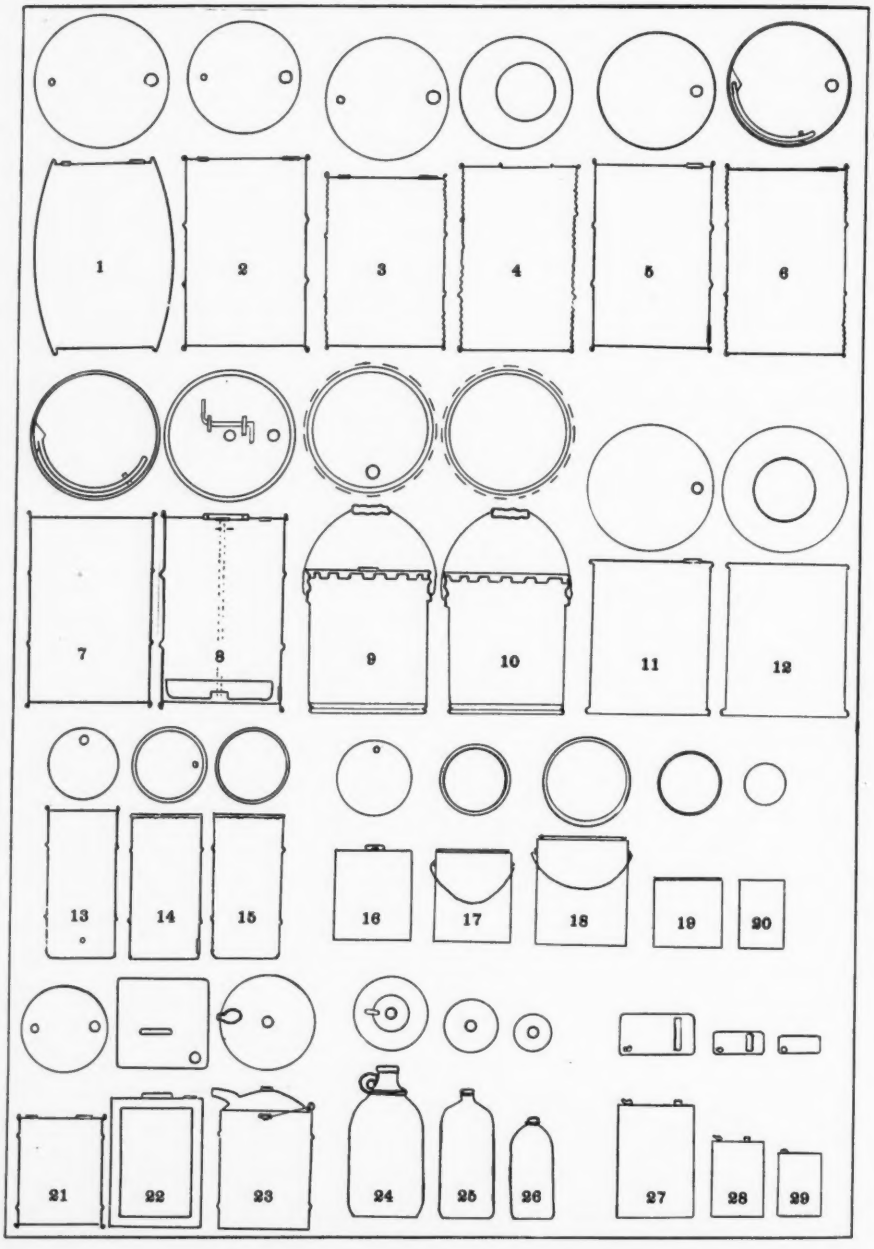
By the elimination of unnecessary containers—particularly "specialty" containers—Standard was able to consolidate and concentrate a large volume of its products into fewer standardized packages. At the same time, these packages were coordinated into a comprehensive and unified whole in which all packages would carry out a fundamental "Family" design. Regardless of the brand names, the basic package (or "label") will now be similar, both in general appearance and in color treament.

More than 500 different products are marketed by Standard Oil under more than 20 separate brand names, but it was not until an attempt was made to classify the various packages that the company realized the magnitude of its packaging problem. This examination brought to light the number of products which were receiving undue packaging attention, completely out of line with the product's true importance, the company explained.

From these figures, it was possible to select those products having the smaller sales volume and to assign them a different, yet adequate, container. Those having a large volume were consolidated into container types, sizes, and shapes which seemed best suited to the products and to the various packaging and warehousing departments' inventory requirements.

M. A. Mattes, manager of the Advertising Department and chairman of the company's Subcommittee on Packaging, pointed out that "before the project was completed, it was found necessary to deal with some 1,800 different applications and modifications of the basic design and color scheme in planning changes in packages, cartons, trade marks, labels, etc. From every point of view it seems to us that an excellent job has been done; that characteristics all of our packages have in common have been emphasized; and that the packages have been given a scientific beauty treatment to enhance their eye appeal, a most valuable asset in any competitive market."

Among the most important results of the program are the numerous economies resultant from such standardization. According to *Good Pack-*



This diagram shows the 29 basic containers now being used by Standard Oil of California. The diagram above each numbered container indicates the shape and special structural details. 1 to 8, and 13, 14, and 15 are drums. 9 to 12, and 16, 17, and 18 are pails; 19 is a 5-lb grease can; 20, a one-quart sealed motor oil can; 21, a 15-gal capacity drum; 22, a 5-gal square can; 23, a 5-gal can; 24, 25, 26 are gallon, quart, and pint glass containers for special products; 27, 28, 29 are gallon, quart, and pint oblong cans.

aging, company spokesmen indicated that in the case of outside purchases, lithographed can blanks may now be printed in substantially larger quantities, since fewer container types are now needed. The new setup also simplifies the supply problem of the can manufacturers since they will not have to carry such large inventories of printed can blanks and, in most cases, will be able to fill orders for several products from an identical can blank, merely making the necessary type changes for imprinting product name in the central white band.

The Subcommittee on Packaging, which was largely responsible for this development, consists of personnel from the Advertising, Distribution, Marketing Operations, Manufacturing, and Purchase and Stores Department, and from the Special Products and Lubricant Divisions of the Marketing Department of the organization.

Its function was to analyze the containers in use and to make specific recommendations as to container standardization for each product. They also found it necessary to select desirable elements in existing brand designs and to study and evolve a uniform color scheme for all packages. Their method of operation is described in *Good Packaging* as follows: "In cooperation with other departments, the subcommittee also surveyed the entire range of packaging materials and package manufacturing methods to determine the optimum ways and means of applying the new designs to the revamped Standard of California packaging setup. This group's findings and recommendations were reviewed and approved by the company's Advertising Committee, which is the top policy-forming group in all matters relating to advertising and packaging."

As one of the nation's major producers, refiners, and marketers of petroleum products, the Standard Oil Company's new package redesign program is expected to have far-reaching effects throughout the Far Western States and Canadian Provinces which comprise the sales market for the organization.

National Bureau of Standards Names New Division Chiefs

SEVERAL changes have been made in the personnel of various divisions of the National Bureau of Standards, according to announcements from Dr E. U. Condon, director of the Bureau. Dr John G. Thompson has been appointed chief of the Metallurgy Division with William F. Roeser designated as assistant chief, while Dr Wilmer Souder now heads the Metrology Division, with David R. Miller serving as his assistant.

In addition, the following section chiefs have been named:

George A. Ellinger, Optical Metallurgy Section
Harold E. Cleaves, Chemical Metallurgy Section
Dr I. C. Schoonover, Dental Materials Section
Dr Peter Hidnert, Thermal Expansion Section
H. Haig Russell, Large-Capacity Scales Section

Dr Thompson has been chief of the Bureau's Chemical Metallurgy Section since 1930 and assistant chief of the division which he now heads since 1942. He has been particularly concerned with the organization and direction of investigations on the metallurgy of uranium conducted at the Bureau. Among other wartime activities with which he was connected was a study of aluminum and beryllium for use in airplane engines. Dr Thompson is also co-author with Harold E. Cleaves of the book, *The Metal-Iron*.

Associated with the Bureau for 31 years, Dr Souder developed the Dental Research Laboratory and the Identification Research Laboratory. He has also contributed extensively to the field of dental materials, introducing physical and engineering concepts in their analysis.

Such concepts as elastic limit, yield point, and thermal expansion have proved invaluable in exploring the properties of dental materials and in the introduction of new materials such as the synthetic plastics now in use for dentures. Dr Souder's research papers have been published both here and abroad, and he is co-author of the book *Physical Properties of Dental Materials*. Prominent in the field of criminology, Dr Souder has done identification work for every department of the government.

Mr Miller was associated with the American Window Glass Company and the Mesta Machine Company before coming to the Bureau in 1908. He is a member of the American Standards Association Sectional Committee on Standardization and Unification of Screw Threads, B1; of the Interdepartmental Screw Thread Committee established by the Departments of War, Navy, and Commerce; and of the Correlating Gage Committee of the American Petroleum Institute. He was active at the International Conference at Ottawa on the Unification of Engineering Standards.

In cooperation with the Office of the Surgeon General, U.S. Army, Mr Roeser has been identified with experimental work and development of specifications for prosthetic devices, including artificial limbs and materials for internal fixation of bones. He also made tests and studies of solders and soldered joints, which assumed importance because of the wartime shortage of tin. He was awarded the John A. Penton medal for the most valuable paper presented to the 1928 Convention of the American Foundrymen's Association, on the subject "Temperature Measurements of Molten Cast Iron".

Uniform Office Methods Proposed by Agencies

Development of a common system of accounting and uniform office methods to improve interagency operating comparisons featured the first postwar meeting of the Trans-America Advertising Agency Network held in Colorado, *Printers' Ink* reports.

Grinding Wheel Maker Described Safe Methods

In further reference to "How to Mount Grinding Wheels Properly", it has been brought to our attention that the Norton Company, Worcester, Massachusetts, manufacturers of grinding wheels, prepared the material on which the article in *Power* (see INDUSTRIAL STANDARDIZATION, August 1946, page 207) was based.

Mac Millen and Somoff Will Expand ASA Services

THE services of the American Standards Association to its members and to the public are being increased as a result of the appointment of Frank Mac Millen as Director of Information for the Association and Eugene Somoff as Technical Service Engineer.

Mr Mac Millen, who resigned from the staff of the *New York Times* to assume his present position, previously was connected for ten years with the Associated Press as Financial News Editor, in which capacity he first came in contact with the work of the Association. He has written many news stories and feature articles on the development of standards, not only for the Associated Press but for the *Wall Street Journal* and *Newsweek* magazine, where he was Assistant Editor in charge of business news.

As Director of Information, Mr Mac Millen will supervise all ASA publicity for general newspapers, trade papers, and radio, designed to inform the public and interested industrial and technical groups concerning the activities of the ASA.

Mr Somoff comes to the organization after wide experience in the services of the United States Army as a Russian translator. Among his assignments was that of administrative assistant in the Translation Unit of the Air Service Command, Fairfield, Ohio, and, subsequently, at the Long Range Research Unit, Weather Information Branch, Army Air Forces, Pasadena, California. Following completion of the Pasadena project, he was transferred to the Publication Division of the Army Service Forces in New York City where he supervised work of the Russian Translation Unit.

In addition to his linguistic talents, Mr Somoff is an electrical engineer, having been employed in that capacity in Russia, Belgium, and Great Britain. He came to the United States as the head of a group of technicians concerned with opening a purchasing agency for a European firm which exported machinery and consumer goods to the East.

As a technical service engineer in the American Standards Association, Mr Somoff's chief function will be to collect and supply technical information concerning American standards and those of other countries. Upon request, he will survey the standards available in any particular field for use by committees initiating new projects. His services are available to all Company Members, as well as to the immediate staff of the ASA.

Company Member Committee Discusses Standards Problems

STANDARDIZATION problems that have caused headaches for company standards departments were discussed by the ASA Company Member Committee at its meeting September 5 and 6 at Detroit. In several cases recommendations were made by the Committee looking toward definite action. In addition to the standardization problems discussed, the Committee approved proposed bylaws, to complete its formal organization, for presentation to the ASA Standards Council.

Among the subjects discussed by the Committee that were of special interest to the member companies were unification and designation of properties of iron and steel; suggestions for changes in standards for bolts; nomenclature of headless bolting units; specification and identification of color; and standard grays for industrial equipment.

A subcommittee set up to consider the problem of unification and designation of properties of iron and steel was instructed to consider ways and means to develop proposals for a uniform symbol designation which will identify the performance-quality characteristics of individual steels. It was suggested that the subcommittee work with the Society of Automotive Engineers, the American Iron and Steel Institute, the American Society for Testing Materials, and any other recognized groups which designate properties of iron and steel. The Committee recommended that if a proposed uniform system is finally developed it be given a trial in one or more company member plants for at least six months before action is taken on it by the Company Member Committee.

Suggestions of a subcommittee which has been studying the possible need for a general-purpose bolt were considered, and as a result of action taken at the meeting, the subcommittee was asked to prepare a report to be presented to the Sectional Committee on Bolt, Nut, and Rivet Proportions, B18.

Suggest Standard Nomenclature for Headless Bolting Units

The fact that there has been some confusion in the use of the words "bolt", "stud", and "stud-bolt", and in the definitions for these terms, was discussed. The subject seemed so important to the members of the Committee that they decided to present a transcript of all of the comment on headless bolting units to the Sectional Committee on Bolt, Nut, and Rivet Proportions. It was suggested that the sectional committee be asked to develop standard nomenclature that is direct, descriptive, and practical.

The uniform specification and identification of color is of such interest to many companies, it was agreed, that a peacetime project would be valuable for the purpose of reconsidering the American War Standard Z44-1942, either for revision or reapproval under the regular peacetime procedure of the American Standards Association.

A discussion of recent proposals for standardization of gray colors used for industrial painting centered around the possibility of standardizing on four standard grays, with the medium light gray to be consistent with color 7-B of the National Machine Tool Builders Association. The Committee voted to recommend to the ASA Standards Council that a project be initiated.

Because of widespread interest in standards for drafting room practice, a subcommittee was appointed to study the present status of standards for drawings and drafting room practice and to report to the Committee on Suggestions for bringing about greater uniformity.

Plaque for Good Workmanship Given by Plastering Foundation

Plastering Industries

Edmond F. Venzie (left) and John F. Rooney, general president, Operative Plasterers and Cement Finishers International Association, inspect first plaque for good plastering.

FOR work that meets their standards of performance within the plastering and lathing industry, the National Foundation for Lathing and Plastering, Inc has instituted a special plaque which will be installed upon the site of the completed job. The first plaque has been awarded for work undertaken by the Venzie Corporation of Philadelphia and its Owner's Certificate goes to V. A. Lea, *Plastering Industries* announces.

To provide local committees with the basic criterion by which to decide whether the plastering and lathing on any particular house, other building, or project merit the Performance Plaque, the Board of Governors of the Foundation recently adopted as its minimum specifications the American Standard Specifications for Gypsum Plastering, including Requirements for Lathing and Furring, A42.1-1942, which is at present under consideration for revision by the ASA sectional committee.

Plans for use of the plaque are sponsored by the Contracting Plasterers' International Association, the Operative Plasterers' and Cement Finishers' International Association, and the Wood, Wire and Metal Lathers' International Union in the hope that it will promote a high level of work quality which, in turn, will attract wide public interest and confidence in lathing and plastering, the Foundation announces. Inferiority in workmanship and materials has been tolerated in some cases of late because of the acute housing shortage, it declared. To stave off eventual criticism of the building industry, the Performance Plaque and Owner's Certificate is being given to help to lift the level of work of the industry.

Institute Adopts Standards For Porcelain Enamel

Standard specifications for the proper materials and methods to be used in designing, fabricating, and processing parts for architectural porcelain enamel have been officially approved and adopted by the Architectural Division of the Porcelain Enamel Institute, Washington, D. C. These specifications were prepared by a special committee after much study and revision, the *Architect and Engineer* announces.

Organizations Help in National Standards Work

The following companies and individuals now have an active part in the national standardization program through their membership in and support of the American Standards Association:

American Optical Company, Southbridge, Massachusetts
Arkwright Mutual Fire Insurance Company, Boston, Massachusetts
Associated Spring Corporation, Bristol, Connecticut
Boston Manufacturers Mutual Fire Insurance Company, Boston, Massachusetts
Dennison Manufacturing Company, Framingham, Massachusetts
Dun & Bradstreet, New York, New York
Engineering Library, University of California, Los Angeles, California
General Foods Corporation, New York, New York
General Mills, Inc, Minneapolis, Minnesota
The Heald Machine Company, Wooster, Massachusetts
International Telephone & Telegraph Corporation, New York, New York
New Orleans Public Service, Inc, New Orleans, Louisiana
Plymouth Cordage Company, North Plymouth, Massachusetts
Underwood Corporation, New York, New York
Union Carbide & Carbon Corporation, New York, New York
Vick Chemical Company, New York, New York
Westinghouse Air Brake Company, Wilmending, Pennsylvania
Weston Electrical Instrument Corporation, Newark, New Jersey

Alfred E. Anderson, Boston, Massachusetts
James F. Angier, Washington, D. C.
George Beiser, Buffalo, New York
Milton C. Everett, New York, New York
H. A. Eysenbach, Jr, Philadelphia, Pennsylvania
Edgar L. Illfelder, New York, New York
Ernest A. Merklein, Shreveport, Louisiana
Harvey S. Pardee, Chicago, Illinois

American Welding Society Annual Meeting

The American Welding Society will hold its 27th Annual Meeting in Atlantic City, New Jersey during the week of November 17-22. A total of 80 technical papers covering such topics as welding research, resistance welding, pressure welding, cutting, weldability, railroad applications, electrodes, hard facing, high alloys, shipbuilding, and production welding will be presented. Another feature of the meeting is the Adams Lecture which will be given by Dr Hess of Rensselaer Polytechnic Institute.

News from other countries

UNSCC Closes Its New York Office

H. J. WOLLNER, Secretary-in-Charge of the New York Office of the United Nations Standards Coordinating Committee, has announced that he has submitted his resignation to James G. Morrow, chairman of the UNSCC Executive Committee. In undertaking the job of organizing western hemispheric activities of the Committee in 1944, Mr Wollner had an understanding with the Committee that he would stay with the organization until June 30, 1946. It was hoped that by this time a new permanent international standards body would have been created. Mr Wollner, who has many years of industrial and governmental experience behind him, was previously Consulting Chemist to the U. S. Treasury Department. He had technological supervision of the manifold scientific and technical activities of the Treasury including Customs, International Revenue, Narcotics, and Bureau of Engraving and Printing. He expects to return to private practice.

The UNSCC has already closed the New York office and will carry on all of the international work through its London office. That office is in charge of the fall international meeting, part of which is being devoted to a study of some of the standards projects which have thus far been proposed. Dr P. G. Agnew, vice president and secretary of the American Standards Association, and Dr E. C. Crittenden, associate director of the National Bureau of Standards and chairman of the ASA Standards Council, are the delegates of the American Standards Association at this meeting.

The membership of the UNSCC now includes the national standards bodies of 18 countries as follows:

Australia	Great Britain
Brazil	Mexico
Belgium	Netherlands
Canada	New Zealand
Chile	Norway
China	Poland
Czechoslovakia	South Africa
Denmark	United States
France	USSR

Canada Favors Agreements On Military Equipment

The standardization of Canadian military equipment with that of the United States and Commonwealth countries is highly favored by Canada, according to a Reuter's news report of a discussion on Army estimates in the House of Commons.

The Honorable Douglas Abbott, Minister of National Defense, is quoted as saying that, as a junior member, Canada cannot initiate such an undertaking "but we can do everything in our power to encourage it". He added that the United States and Great Britain were studying the matter.

Japan Standardizing Textile Machinery

The problem of standardizing Japanese textile machinery has been taken up by a committee composed of the five leading textile machinery manufacturers of Japan, declares the *Journal of Commerce*.

Traditionally differing in design and in other standards, these companies discovered, when they attempted to plan production of textile machinery in keeping with the rehabilitation needs of the industry, that mass production and repair work were most difficult under such circumstances. Each company now plans to establish a "test mill" for experimentation with textile machinery designs and techniques.

BSI Organizing Auto Standards Committee

As part of an attempt to impress upon British car and commercial vehicle manufacturers, body builders, and accessory and component makers the necessity for a much greater degree of standardization, the Standardization Committee of the Society of Motor Manufacturers and Traders is being reorganized and will form the Automobile Standards Committee of the British Standards Institution.

In the *Times Trade & Engineering Supplement*, London, in July it was stated that, with the exception of standards relating to tires and wheels, none of the standards established in Great Britain in the past has been adopted to any substantial extent. Investigations of the use of existing standards have shown departures therefrom of a trifling character, the *Times* supplement reports, having no justification from a design aspect, and all contributing to increased cost.

Had the standard article been in general demand, the article declares, this cost should have been reduced.

The Society of Motor Manufacturers recognizes that there is a wide scope in the motor industry for a greater use of standard materials. The tendency in the past has been to deal with small parts as offering the most immediate prospects for economy. In the future the interchange of major components will be tackled.

British Encourage Use Of Building Standards

Sponsored by various Government Departments concerned with housing, a "Standard Products for Housing" Exhibition was held in London, recently. The object of the display was to make known the types of goods in production, from whom they are obtainable, and, in particular, to demonstrate the value of standardization. The government has been trying to encourage the use of products which conform to recent British Standards with a view toward ensuring certain basic qualities. Exhibits range from tiles, pipes, and other structural components to doorknobs and the latest types of domestic cookers. All conform to standards of quality and size agreed upon by the manufacturers in consultation with special government committees and with standards developed under the procedure of the British Standards Institution.

Performance Recommendations for Residence Luminaires

New Performance Recommendations for Portable and Installed Residence Luminaires were released by the Illuminating Engineering Society at its annual convention at Quebec, September 18-20. Although the recommendations are not specifications for manufacturing fixtures and portable lamps, the IES Residence Lighting Committee believes that they will serve as a basis for the preparation of specifications, the IES explains.

Close to 1000 delegates from Canada, the United States, and England attended the Society's Annual Convention. The sessions covered residence lighting, street and highway lighting, and industrial, store, and schoolroom lighting, and artificial sunshine rooms for hospitals.

Standards in Latin America

Reported by E. A. Pratt

Manager, International Relations, ASA

THE national standards association of Brazil (Associação Brasileira de Normas Técnicas), which has heretofore confined its work to technical specifications, methods of test, and codes, has now taken up the subject of industrial safety standards. A basic standard with the title "Standard for the Statistical Survey of Industrial Accidents" has been prepared by a committee representing manufacturing, electric power, and insurance interests, as well as railways, docks, the Brazilian Association for the Prevention of Accidents, and the Brazilian Government. The standard is comparable to the American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, with adaptations to take into account Brazilian legislation on industrial accidents. In circulating the draft, the Brazilian association points out the need of insuring the comparability of their statistics with those of other countries.

Brazil to Draft New Building Code

In view of current building code activities in this country, it is interesting to note that the Federal District of Brazil, which includes the City of Rio de Janeiro, has delegated to the Brazilian standards association the work of drafting a new building code. It is hoped that this will lead to the preparation of a basic code having uniform technical provisions, suitable for use throughout Brazil, but leaving the administrative sections to be designed to suit local conditions.

The Chilean standards institute (Instituto Nacional de Investigaciones Tecnológicas y Normalización) has now begun to issue its first draft standards, three of which have been received by the American Standards Association. These are: (1) Inch-Millimeter Conversion; (2) Normal Temperature for Physical and Chemical Measurements; (3) Scale of Intensity of Seismic Phenomena. The standard covering inch-millimeter conversion is in complete agreement with American Standard, Inch-Millimeter Conversion for Industrial Use, B48.1-1933, to which reference is specifically made in the Chilean standard, the basis being 1 inch equals 25.4 millimeters. This conversion factor was recommended for industrial application by Technical Committee 9d of the International Standards Association at a meeting at The Hague on January 23, 1930. The English and metric equivalents are tabulated in ISA Bulletin Number 6, where it is stated that the recommendation of the technical committee received the support of 16 members of the Association. This, with the addition of the United States and Great Britain, and, subsequently, Argentina, makes it practically a world standard.

The Chilean Standard on Normal Temperature adopts the temperature of 20 C as normal for physical and chemical measurements of a scientific and technical nature. It agrees with American Standard, Tolerances, Allowances and Gages for Metal Fits, B4a-1925, insofar as it is applicable to such measurements.

The Chilean standard on intensity of seismic phenomena has no counterpart among American Standards. It sets up an arbitrary scale of earthquake intensities expressed in the most readily observable effects, such as the stopping of clocks, cracking of walls, or the collapse of buildings, and is designed for use in public instruction, technical publications, etc.

Receive Mexican Construction, Electrical, Chemical Standards

Ten new Mexican standards have just been received by the American Standards Association. Five of these deal with construction materials, two cover the performance of small electrical appliances, and the remaining three are specifications for chemicals.

Translations of these or any other national standards of Western Hemisphere countries will be made available by the American Standards Association to any Member of the ASA interested in them.

Ask International Work On Food Containers

Requests for two new international projects to provide standards for packages for frozen foods and for screw threads for the necks of glass bottles and jars, have been presented to the United Nations Standards Coordinating Committee by the Norwegian Standards Association. The requests will be considered either by the UNSCC or by a new international standards organization that may be set up following meetings in London in October.

"One of the conditions for increased use domestically and for import and export of deep frozen food," the Norwegian Standards Association explains, "is that the packages used are not only standardized with regard to their dimensions but also that the standards followed in the various countries are the same."

Concerning the request for standard screw threads for glassware, the Norwegian Association declares:

"With the increased use in the domestic and foreign trade in glass bottles and jars fitted with a screwed-on lid, it is felt very inconvenient for the lids of such containers not to be interchangeable. An attempt should therefore be made to unify the relevant national and other standards of the various countries so that the excess variety of screw thread systems and of heights of threaded necks of bottles and jars and of screwed-on lids can be reduced."

Retailers Propose Standards for Frozen Foods

In an attempt to improve the quality of packaged frozen foods, retailers at the 45th annual convention of the New York State Food Merchants Association pledged themselves to urge individual food packers to discontinue production of secondary grades of frozen foods. In a resolution adopted at the meeting it was urged that the existing schedule of standards offered by the U. S. Department of Agriculture for Grade A frozen fruits and vegetables be adopted by the industry as the minimum permissible quality.

Customer dissatisfaction has caused a great deal of fear among merchants that a huge potential postwar market in frozen foods will be endangered, the Association announced.

New Standards from Other Countries

The following new and revised standards, recently received by the American Standards Association from other countries, may be borrowed by ASA Members from the ASA Library or purchased through the Sales Department.

Drafts of proposed standards are not for sale, but they may be borrowed.

All standards are available solely in the language of the country issuing them.

Great Britain

New Standards Issued

Synthetic-Resin Bonded-Paper Tubes, for Use as Electrical Insulation, for Power Circuits, BS1314:1946

Draft of Proposed Standard

Ball Valves, CH(HIB)4946
Protective Filters for Welding and Other Industrial Operations, (Draft Revision of BS679), CH(PSM)5763

Revised Standards Issued

Flameproof Enclosure of Electrical Apparatus, BS229:1946
Pressed Steel Gutters, Pipes, Fittings, and Accessories, BS1091:1946
Schedule of Sizes for Locks and Latches for Doors, BS455:1946

Foreign Language Standards

The following standards are available solely in the language of the country issuing them. Only the titles have been translated into English.

France

E63-022, Cisailles-guillotines: 1—Gamme normale des longeurs maxima de coupe; 2—Section des lames
Cinématographie
S24-001, Films cinématographiques: Support de sécurité
S24-002, Film de 35 mm: Dimensions du film vierge avec perforations arrondies dites "négatives"
S24-003, Film de 35 mm: Dimensions du film vierge avec perforations rectangulaires dites "positives"
S24-004, Film de 35 mm: Image négative
S24-005, Film de 35 mm: Enregistrement sonore
S25-001, Film de 35 mm: Tirage des copies d'exploitation

Cinématographie—Continued

S25-002, Film de 35 mm: Copie d'exploitation
S25-003, Film de 35 mm: Montage des copies d'exploitation
S26-001, Projecteur de 35 mm: Fenêtre image et lecture sonore
S27-001, Projection 35 mm: Caractéristiques dimensionnelles des salles
S27-002, Projection 35 mm: Caractéristiques acoustiques des salles

Mexico

Calcined Gypsum for Construction Work, C11-1946
Cupric Sulfate, K26-1946
Electric Irons, Performance of, J6-1946
Electric Switches (Small), Performance of, J5-1946
Magnesium Cacodylate, K29-1946
Principal Siderurgical Products, Definitions and Symbols for the, B19-1946
Refractory Clay, Pieces of, C16-1946
Refractory Clay of Special Form, Pieces of, C15-1946
Silver Nitrate, K30-1946
Squared Timber, Definitions of Terms with Relation to, C17-1946

Sweden

Coupling Part, External Thread, for Connection of 32 Millimeter Half-Coupling, SMS1180
Coupling Part, Internal Thread, for Connection of 32 Millimeter Half-Coupling, SMS1179
Hose Coupling, 32 Millimeter
Coupler Head, Constructional Drawing, SMS1182
for 25 Millimeter Hose, SMS1177
for 32 Millimeter Hose, SMS1176
for 38 Millimeter Hose, SMS1178
Packing, SMS1183
Reducing Part from 63 Millimeter to 32 Millimeter, Hose, Half-Coupling, SMS 1181
Tri-Furcating Part with Cocks, for Connection to 32 Millimeter Hose, Half-Coupling, SMS1184

Switzerland

Abrasives in Lubricating Greases, SNV 81125, December 1945
Definition of Various Mineral Oils and Mineral Oil Products, SNV81144, May 1946
Emulsifiable Oils Employed in Milling Work: Composition of Emulsions, SNV 81119, November 1945
Emulsifiable Oils Employed in Milling Work: Hydrogene Ions Contents-pH Value, SNV81120, November 1945
Formation of Ice Crystals in Lubricating Greases at Temperatures Below 0°C, SNV81122, December 1945
Homogeneity of Lubricating Greases, SNV 81124, December 1945

—New Standards in ASA Library—

For the information of ASA Members, the American Standards Association publishes a selected list of standards as they are received by the ASA Library. The list below includes only those standards received recently which the ASA believes are of greatest interest to Members.

These standards may be consulted by Members at the ASA Library, or copies may be obtained from the organization issuing the standard. The address of the organization is included for convenience in ordering.

Associations and Technical Societies

American Society For Testing Materials

(1916 Race St., Philadelphia 3, Pa.)

As a service to Company Members, the ASA maintains a sale file of all ASTM standards. They can be purchased from the ASA Sales Department at 25 cents each, except where otherwise noted.

ASTM Standards

Aluminum Ingots for Remelting, Specifications for, B24-46
Compression Testing of Cast Iron, Method of, A256-46
Coal, Method of Test for Free-Swelling Index of, D720-46
Coal and Coke, Methods of Laboratory Sampling and Analysis of, D271-46
Drawn or Rolled Alloy, 60 Percent Nickel, 16 Percent Chromium, and Balance Iron, for Electrical-Heating Elements, Specifications for, B83-46
Gray Iron Castings, Specifications for, A48-46
Magnetic Testing, Definitions of Terms, with Symbols, Relating to, A127-46
Roads and Pavements, Definitions of Terms Relating to Materials for, D8-46
Sampling Coals Classed According to Ash Content, Methods of, D492-46
Slab Zinc (Spelter), Specifications for, B6-46

ASTM Tentatives

Alloy-Steel Forgings for Nonmagnetic Coil Retaining Rings for Turbine Generators, Specifications for, A289-46T
Aluminum Sheet and Plate for Use in Welded Pressure Vessels, Specifications for, B178-46T
Aluminum-Manganese Alloy Sheet and Plate for Use in Welded Pressure Vessels, Specifications for, B126-46T
Apparent Density of Metal Powders, Method of Test for, B212-46T
Bunch-Stranded Copper Conductors for Electrical Conductors, Specifications for, B174-45T
Carbon-Steel and Alloy-Steel Forgings for Magnetic Retaining Rings for Turbine Generators, Specifications for, A288-46T
Carbon-Steel and Alloy-Steel Forgings for Pinions for Main Reduction Gears, A291-46T
Carbon-Steel and Alloy-Steel Forgings for Turbine Bucket Wheels, Specifications for, A294-46T
Carbon-Steel and Alloy-Steel Forgings for Turbine Generator Rotors and Shafts, Specifications for, A292-46T

ASTM Tentatives—Continued

Carbon-Steel and Alloy-Steel Forgings for Turbine Rotors and Shafts, Specifications for, A293-46T
Carbon-Steel Forgings for Rings for Main Reduction Gears, Specifications for, A290-46T
Copper-Base Alloys in Ingot Form for Sand Castings, Specifications for, B30-45T
Drawn or Rolled Alloy, 80 Percent Nickel, 20 Percent Chromium, for Electrical-Heating Elements, Specifications for, B82-44T
Fineness of Portland Cement by Air Permeability Apparatus, Method of Test for, C204-46T
Flow Rate of Metal Powders, Method of Test for, B213-46T
Incline Impact Test for Shipping Containers, Method of, D880-46T
Industrial Grade Benzene, Specifications for, D836-46T
Iron and Steel Gas-Welding Rods, Specifications for, A251-46T
Local Thickness of Electrodeposited Coatings, Method of Test for, A219-45T
Phenolic Molding Compounds, Specifications for, D700-45T
Portland Blast-Furnace Slag Cement, Specifications for, C205-46T
Resistivity of Copper and Copper-Alloy Electrical Conductors, Method of Test for, B193-45T
Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Members, for Electrical Conductors, Specifications for, B172-45T
Rope-Lay-Stranded Copper Conductors Having Concentric-Stranded Members, for Electrical Conductors, Specifications for, B173-45T
Sampling Finished Lots of Metal Powders, Method of, B215-46T
Shipping Containers in Revolving Hexagonal Drum, Method of Test for, D782-46T
Sieve Analysis of Granular Metal Powders, Method of Test for, B214-46T
Terms Relating to Cast Iron, Definitions of, A196-46T

American Wood-Preservers' Association

(1427 Eye Street, N. W., Washington 5, D. C.)

New Standards

Coke Residue, Method for the Determination of, 7e, 1946
Creosote, Specification for, 4g, 1946
Creosote-Petroleum Solution, Specification for, 63b, 1946
Distillation, Method of, 11g, 1946
Distillation Fractions, Method for the Determination of the Specific Gravity of, 9d, 1946
Oil Preservatives, Method for the Determination of the Specific Gravity of, 18d, 1946
Preservative Treatment of Oak Ties and Lumber by Pressure Processes, Specifications for the, 52c, 1946
Preservative Treatment of Southern Pine Ties and Lumber by the Pressure Processes, Specifications for the, 53d, 1946
Wood, Instructions for the Inspection of Preservative Treatment of, 33e, 1946

Tentatives

Creosoted-Wood Foundation Piles, Recommended Practice for, 67a, 1946
Forest Products, Recommendations for the Purchase and Preservation of, 2f, 1946
Preservative Treatment of Black or Red Gum Ties and Lumber by Pressure Processes, Specification for the, 64a, 1946
Preservative Treatment of Intermountain Douglas Fir Ties and Lumber by Pressure Processes, Specification for the, 65a, 1946
Preservative Treatment of Pacific Coast Douglas Fir Ties and Lumber by Pressure Processes, Specification for the 38d, 1946
Preservative Treatment of Western Hemlock Ties and Lumber by Pressure Processes, Specification for the, 66a, 1946
Round Forest Products, Volume of, 14d, 1946

National Aircraft Standards Committee

(Aircraft Industries Association of America, Inc, 610 Shoreham Building, Washington, D. C.)

Bolt-100° Close Tolerance High Strength: 1/4-28, NAS334; 5/16-24, NAS335; 3/8-24, NAS336; 7/16-20, NAS337; 1/2-20, NAS338; 9/16-18, NAS339; 5/8-18, NAS 340; July 1946
Specification Nut Self-Locking Internal Wrenching-Aircraft, NAS353, February 1946

Society of Automotive Engineers, Inc

(29 West 39th Street, New York 18, N. Y.)

Gasket-Governor Mounting, AS108, 25¢
Terminology of Dual and Coaxial Counter Rotating Propellers, ARP355, 25¢
Spark Plug Tread Form and Data (60° Thread Angle), AS368, 25¢

New Standards in ASA Library—Continued

U. S. Government

(Wherever a price is indicated, the publication may be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C. In other cases, copies may be obtained from the government agency concerned.)

National Bureau of Standards (Washington 25, D. C.)

Simplified Practice Recommendation

Tubes, Paper, for Packaging Milk-Bottle Caps, R218-46, 5¢

Commercial Standards

Netting, Woven Wire, CS133-46, 5¢
Pajama-Sizes (Woven-Fabrics), Men's, CS15-46, 5¢
Shirt-Sizes, Men's (Exclusive of Work Shirts), CS135-46, 5¢

Standards Branch (Room 6046, Procurement Division Building, 7th & D Streets, SW, Washington 25, D.C.)

Federal Specifications are prepared for use by all government departments and establishments in their purchases. Copies are available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 5 cents each. Requests should be accompanied by cash, check, or money order.

As a service to Company Members, the ASA maintains a sale file of all Federal Specifications. These specifications can be purchased from the ASA Sales Department.

Federal Specifications

Bags; Kidney-Compression, Rubber, ZZ-B-63, September 1946
Bands and Sheets; Copper, Dental, RR-B-96, September 1946
Belts; for Dental Engines, JJ-B-178, September 1946
Cloth; Tracing, (Amendment 1), CCC-C-531c, September 1946
Cups, Dissolving; with Covers and Racks, GG-C-821, September 1946
Detergents, Hand; Paste and Powder, for Mechanics' Use (Superseding Fed Spec P-D-221), P-D-221a, September 1946
Files, Dental; Pulp-Canal, with Handle, GG-F-336, September 1946
Hose; Suction, Water, Smooth-Bore (Superseding Fed Spec ZZ-H-561b), ZZ-H-561c, September 1946
Machines, Food-Mixing; Electrically Operated, Commercial Type (Cake and Kitchen) (Superseding Amendment 1), (Amendment 2), OO-M-38, September 1946
Paper; Legal-Cap, Ruled (Superseding Fed Spec UU-P-301), UU-P-301a, September 1946
Paper; Writing (Superseding Fed Spec UU-P-641), UU-P-641a, September 1946
Tripods; Laboratory, GG-T-696, September 1946
Wire; Copper, Soft or Annealed, (Amendment 1), QQ-W-341a, September 1946

Actions on Commercial Standards and Simplified Practice Recommendations

Commercial Standards

Announced by the Division of Trade Standards, National Bureau of Standards

Crawler Mounted, Revolving Power Shovels, Lifting Cranes, Dragline and Clamshell Excavators (Export Classifications), Proposed Revision of, CS90E-41—

This standard provides requirements, nomenclature, definitions, and information regarding application of machines having shovel dipper capacities ranging from ⅜ to 2½ cu yd (0.286 to 1.91 cubic meters) and crane capacities ranging from 2½ to 60 tons (2268 to 54,432 kilograms). It sets up uniform methods of taking dimensions determining working ranges, power, line speeds, line pulls, and lifting capacities for comparison of models offered by manufacturers for export from the U. S.

Hospital Flat Rubber Goods, Recommended Commercial Standard TS-4182—

This Recommended Commercial Standard covers minimum requirements for water bottles, ice caps (oval shaped), ice bags (collar style, spring type), ice bags (throat and spinal type), invalid air cushion (ring type), and operating air cushions and pads (Kelly type). The requirements include workmanship, materials, fittings design, capacities, dimensions, and physical characteristics of material used. Also included are methods of test, and the recommended wording of a uniform guarantee statement.

Industrial Mineral Wool Products, All Types — Testing and Reporting, CS131-46—

This standard, effective from March 15, 1946, provides uniform methods for testing and reporting the physical and chemical properties of mineral wool products made of rock, slag, or glass and describes equipment required to produce standard results. Methods of test for adhesive strength, compressive strength, corrosion resistance, coverage, density, fire resistance, moisture adsorption, odor emission, shot content, temperature stability, and thermal conductivity are included.

Men's Shirt Sizes (Exclusive of Work Shirts), CS135-46—

To provide standard methods of measuring and standard minimum measurements for the guidance of producers, distributors, and users is the purpose of this Commercial Standard. It is aimed to eliminate confusion resulting from a diversity of measurements and methods and to provide a uniform basis for guaranteeing full size, the Division of Trade Standards announces.

The garments covered are men's shirts, exclusive of work shirts, whether made of shrunk or unshrunk material. Methods of measuring and minimum measurements for neckband, chest, front length, back length, armholes, and sleeve width of shirts in sizes 14 to 17, inclusive, are specified. The standard is effective for new production from July 15, 1946.

Pine Stock Doors, CS120-44—

The purpose of this recommended revision of the Commercial Standard for Standard Stock Ponderosa Pine Doors is to establish standard specifications and sizes for ponderosa pine, standard stock doors to guide producers, distributors, architects, builders, and the public.

It provides minimum specifications for stock ponderosa pine doors in four nominal thicknesses: ¾, 1⅛, 1⅜, and 1¾ inches. It covers construction, grades, and tolerances for these requirements.

Work Gloves, Recommended Commercial Standard TS-4157—

Standard definitions, nomenclature, methods of measuring, and standard minimum measurements for work gloves are given in this Recommended Commercial Standard. Work gloves and mittens made from canton flannel, Jersey cloth, and fabric-leather combinations for men, women, and children are covered. The standard also includes quality requirements for fabric and fabric-leather combination gloves and specifies classes including types or styles.

Simplified Practice Recommendations

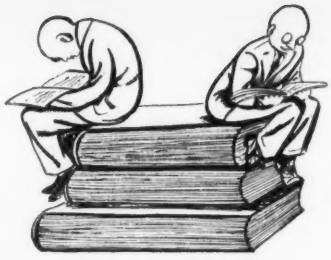
Announced by the Division of Simplified Practice, National Bureau of Standards

Bell-Bottom Screw Jacks, Proposed Revision of R97-42—

A return to voluntary peacetime simplified practice within this industry is the aim of the proposed revision of Simplified Practice Recommendation R97-42. Three changes in the table for four-way head-type jacks are proposed and a table for ratchet head-type jacks is added.

Glass Containers for Maraschino Cherries, Proposed Revision of R197-42—

The Marachino Cherry and Glace Fruit Association, in conjunction with the Committee on Container Design and Specifications of the Glass Container Manufacturers Institute, has suggested this proposed revision. Under its terms, all items included in the original Simplified Practice Recommendation, promulgated in 1942, would be retained and a new line of four wide-mouth jar sizes would be added. Standard capacities, dimensions, weights of glass, and finishes would also be shown.



—ASA—
Standards Activities

Book Marks

Charts Relating to Suspension Problems and Vibrating Systems (Special Publications Department, Society of Automotive Engineers, 29 West 39th Street, New York, N. Y., $1.00)

Basic data pertaining to suspension problems and to vibrating systems generally are presented in the form of eight charts prepared by the Ride and Vibration Data Subcommittee of the SAE Riding Comfort Research Committee.

The characteristics of vibrating systems are defined by a few fundamental equations involving such variables as mass, spring rate, displacement, frequency, and acceleration. The charts relate quantitatively combinations of these variables which give the most significant and, therefore, the most useful information. Each chart is accompanied by explanatory notes covering the fundamental equations, definitions of terms and symbols, and illustrative examples. They are designed to take the place of a slide rule in obtaining more quickly and, with sufficient accuracy, the final solutions to routine problems, and to portray visually the most important basic relationships which are not readily apparent from mathematical formulae alone.

Coordinating Research Council 1946 Handbook (Coordinating Research Council, Inc, 30 Rockefeller Plaza, New York 20, N. Y., $7.00)

An entirely new section—Lubricants Research—has been added in the 1946 edition of the *CRC Handbook*. Previous editions had dealt only with fuel research, thus accounting for the old title of *CFC Handbook*. The new volume is much larger than its predecessor, containing twice the number of authorized test procedures, as well as numerous charts, data forms, and illustrations of test apparatus. Published in a limited edition, distribution is partially restricted.

American Standards

American Standards Approved

Specifications for Gypsum Plastering, Including Lathing and Furring, A42.1-1946 (Revision of A42.1-1942)
Specifications for Portland Cement Stucco, A42.2-1946
Specifications for Portland Cement Plastering, A42.3-1946
Sponsors: American Institute of Architects; American Society for Testing Materials

Letter Symbols for Chemical Engineering, Z10.12-1946
Sponsors: American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; Society for the Promotion of Engineering Education

American Standards Withdrawn

Gear Materials and Blanks, American Recommended Practice, B6.2-1933
Backlash for General Purpose Spur Gearing, American Standard, B6.3-1940
Sponsors: American Gear Manufacturers Association; American Society of Mechanical Engineers

Standards Being Considered by ASA for Approval

Bedding and Upholstery, L12—
- Definitions (including Tolerances) for Cotton Filling Materials for Bedding and Upholstery, L12.1
- Definitions (including Tolerances) for Wool Filling Materials for Bedding and Upholstery, L12.2
- Definitions for Miscellaneous Filling Materials for Bedding and Upholstery, L12.4

Sponsor: National Association of Bedding and Upholstery Law Enforcement Officials

Brass Rod and Bar for Screw Machine (Revision of ASTM B16-45; ASA H8.1-1945)
Copper Water Tube (Revision of ASTM B88-45; ASA H23.1-1945)
Copper-Base Forging Rods (Revision of ASTM B124-45; ASA H7.1-1945)
Sponsor: American Society for Testing Materials

Building Exits Code (Revision of A9.1-1942)
Sponsor: National Fire Protection Association

Involute Splines (Revision of B5.15-1939)
Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association; Society of Automotive Engineers

National Electrical Code (Revision of C1-1940)
Sponsor: National Fire Protection Association

Motion Picture Photography:
- Theater Projection Rooms (Revision of American Recommended Practice Z22-.28-1941, to be designated as Proposed American Standard Dimensions for Motion Picture Theater Projection Rooms, Z22.28)
- Theater Projection Screens (Revision of American Recommended Practice, Z22-.29-1941, to be designated as Proposed American Standard Dimensions for Motion Picture Theater Projection Screens, Z22.29)
- Safety Film (Revision of American Recommended Practice Z22.31-1941, to be designated as Proposed American Standard Definition for Motion Picture Safety Film, Z22.31)

Sponsor: Society of Motion Picture Engineers

Still Photography:
- Internal Dimensions for Radiographic Film Processing Tanks, Z38.8.7
- Internal Dimensions for Deep Tanks for Commercial Photofinishing, Z38.8.8
- Accuracy of Scales, Graduates, and Thermometers for Use in Photography, Z38.8.9

Sponsor: Optical Society of America

Steel Socket-Welding Fittings, B16.11
Sponsors: American Society of Mechanical Engineers; Heating, Piping and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

Addenda to American Standard Approval Requirements for Hotel and Restaurant Ranges and Unit Broilers, Z21.3-1940
Addenda to American Standard Approval Requirements for Hotel and Restaurant Deep Fat Fryers, Z21.27-1940
Sponsor: American Gas Association

New Projects Initiated

Women's Industrial Clothing
Sponsor: Associated Manufacturers of Washable Service Apparel

Identification and Cataloging of Antifriction Bearings
Sponsor: Mechanical Standards Committee

New Projects Being Considered

Linemen's Rubber Protective Equipment (peacetime project)

News About ASA Projects

Advisory Committee on Ultimate Consumer Goods—

A special committee to study methods of expediting ACUCG procedure was appointed at the September meeting of the organization. Announcement was also made of the change in title of Project B38, Specifications for Refrigerators, to read "Standards for Household Refrigerators and Home and Farm Freezers". Corresponding modifications were made in the personnel of the committee and in its scope so that it may include standards for home and farm freezers.

Electric Measuring Instruments, C39—

Sponsor: Electrical Standards Committee

A working committee is in the process of drafting preliminary specifications for a revision of the American Standard for Electrical Indicating Instruments, C39.1-1938, which will be coordinated with all of the Joint Army-Navy Specifications and the American War Standards in the hope that it will result in peacetime standards incorporating all of the advances made during the war.

Numbering System for Antifriction Bearings, B54—

Sponsor: Mechanical Standards Committee.

At its meeting September 12, the Standards Council voted that a sectional committee should be organized to work on this new project, and that the Mechanical Standards Committee be authorized to serve as sponsor. The sectional committee is now being organized.

Principles Underlying Valid Certification and Labeling of Commodities, Z34—

The revised draft of the Proposed American Standard Practice for Certification Procedures, Z34.1, is now being voted upon by members of ASA Sectional Committee Z34 through letter ballot.

Screw Threads, B1—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Following the end of the contract between the U. S. Government and the American Standards Association, the work on proposed American War Standards for Screw Threads has been transferred to the Sectional Committee on Screw Threads. This committee is under the sponsorship of the American Society of Mechanical Engineers and the Society of Automotive Engineers.

A revision of the American War Standard, Screw Threads of Truncated Whitworth Form, B1.6-1944, is still under consideration by ASA War Committee B1. This matter has not been referred to the sectional committee, since it is not the intention of American industry that this American War Standard be approved as a regular American Standard. The proposed revision has been sent to letter ballot of the ASA War Committee. Also, it has been sent to the British Standards Institution and the Canadian Standards Association, for their comments before approval.

Work on proposed standards formerly under the jurisdiction of the War Committee and now transferred to the sectional committee includes buttress threads, instrument screw threads, stub acme threads, and the conversion of the American War Standard for Acme Threads, B1.5-1945, to a regular American Standard. The proposed unification of American and British screw threads on which tentative agreement between the American, British, and Canadian delegations was reached at the Ottawa Conference, is still being considered by the sectional committee in connection with a revision of the American Standard for Screw Threads, B1.1-1935.

Standardization in the Field of Photography, Z38—

Sponsor: Optical Society of America

Action was taken at the last meeting of the Sectional Committee Z38 to submit the following proposed American Standards for letter ballot action of the committee: Proposed American Standard Photographic Exposure Meters (Photoelectric Type), Z38.2.6; three proposed American Standards covering Definitions and Methods of Measuring Focal Lengths, Nomenclature for Parts of Photographic Lenses, and Apertures and Related Quantities of Photographic Lenses; revision of American Standard Distance (Focusing) Scales Marked in Meters, Z38.4.13-1944; Proposed American Standard Practice for Microfilms, Z38.7.8; Proposed American Standard Method for Determining Resolving Power of Lenses for Projectors for 35-Millimeter Slidefilm and 2- x 2-Inch Slides, Z38.7.16; Proposed American Standard Dimensions for Sheet Film Processing Tanks, Z38.8.15; and Proposed American Standards for Photographic Chemicals divided into three groups as follows: 10 developing agents, 8 alkalies, 3 sulfites.

The following proposed American Standards will be published for a one-year trial and criticism: Dimensions for Intermediate and Larger Lantern Slides, Z38.7.18; Photographic Laboratory Timers, Z38.8.10; Photographic Thermometers, Z38.8.11; and Photographic Graduates, Z38.8.12.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of INDUSTRIAL STANDARDIZATION, published monthly at New York, N. Y., for Oct. 1, 1946.

State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Ruth E. Mason, who, having been duly sworn according to law, deposes and says that she is the editor of the INDUSTRIAL STANDARDIZATION and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Standards Association, 70 East 45th Street, New York 17, N. Y. Editor, Ruth E. Mason, 70 East 45th Street, New York 17, N. Y. Managing Editor, none. Business Managers, none.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) American Standards Association, 70 East 45th Street, New York 17, N. Y., Henry B. Bryans (Executive Vice-President, Philadelphia Electric Company, Philadelphia, Pa.) President, 70 East 45th Street, New York 17, N. Y. P. G. Agnew, Secretary, 70 East 45th Street, New York 17, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is ..... (This information is required from daily publications only.)

RUTH E. MASON,
Editor.

Sworn to and subscribed before me this 9th day of September, 1946.

(Seal)

LYDA I. SJOHOLM.

(My commission expires March 30, 1947.)

New American Standards Available

American Standards Association • ASA • 70 East 45th Street, New York 17, N. Y.

No. of Copies	ASA Number	Title and Description of Standard	Price
.....	A62.3-1946	**Sizes of Clay and Concrete Modular Masonry Units** ..... This standard is one of a series being developed to bring the modular system into use by manufacturers and producers of building materials and equipment. It conforms to and supplements the two standards already approved—the American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945, and the American Standard Basis for the Coordination of Masonry, A62.2-1945. (*Sponsors:* The American Institute of Architects: The Producers' Council, Inc)	.35
.....	A89.1-1946	**Building Regulations for Reinforced Concrete (ACI 318-41)** ..... The regulations in this standard cover the use of reinforced concrete and plain concrete in any structure to be erected under the provisions of the building code of which the regulations form a part. The standard outlines specifications for materials and tests, concrete quality and working stresses, mixing and placing concrete, forms and details of construction, design, flexual computations, shear and diagonal tensions, bond and anchorage, flat slabs, reinforced concrete columns and walls, and footings. (*Sponsor:* American Concrete Institute)	.50
.....	M12.1-1946	**Construction and Maintenance of Ladders and Stairs for Mines** ..... This is one of a group of national mining standards being developed under the auspices of the ASA. The general requirements cover ingress to and egress from mines, and ladderways. Specifications for main and secondary ladderways, precautions during sinking, and appurtenances in shaft ladderways are given. A section is devoted to mine ladders used undergroud and fixed ladders and another to mine stairways. The section on mine stairs covers risers and treads, handrails, and toeboards. (*Sponsor:* American Mining Congress)	.30
.....	Z20.2-1946	**Grandstands, Tents, and Other Places of Outdoor Assembly** ..... After the circus fire in Hartford, Conn. in 1944, in which 168 lives were lost, widespread public demand for a standard which could be used as the basis for municipal or state regulations applied with the force of law, resulted in the organization of an ASA committee under the joint sponsorship of the Building Officials Conference of America and the National Fire Protection Association. After extensive deliberation, this standard was approved by the ASA on May 22, 1946. The standard covers the design, maintenance, and use of grandstands, tents, and other structures and premises for use or used as places of outdoor assembly. Its purpose is to specify reasonable standards to safeguard persons and property. The section on grandstands covers location, separation, loads, design, erection, aisles, seating, railings or guards, sectional benches, movable seating. The section on tents gives location, structural requirements, flame resistance, and fire hazards. Requirements for ways of egress from places of outdoor assembly are given. A section on fire protection covers electrical installations, storage and handling of flammable liquids and gases, police and fire detail, and fire-extinguishing equipment. (*Sponsors:* Building Officials Conference of America; National Fire Protection Association)	.25
.....	Z37.19-1946	**Allowable Concentration of Trichloroethylene** ..... The purpose of this standard is to prescribe the maximum concentration of trichloroethylene that can safely be permitted in the air of work places. It is intended to be used as a guide in establishing control procedures for the protection of workers. It gives the general, physical-chemical, and toxic properties of trichloroethylene, the permissible concentration, and the sampling procedure and analytical methods to be used.	.30
.....	Z38.1.47-1946	**35-Millimeter Film Magazines for Still Picture Cameras, Dimensions for**	.15
.....	Z38.3.3-1946	**35-Millimeter Slidefilm Projection Rolls, Specifications for**	.15
.....	Z38.7.17-1946	**Reels for Processed Microfilm**	.15
.....	Z38.7.9-1946	**Microfilm Readers, Specifications for** ..... The above four single-sheet standards were developed by the ASA committee on standardization in the field of photography. (*Sponsor:* Optical Society of America)	.15

ASA COMPANY MEMBERS *are entitled to* ***one free copy of each*** *newly approved American Standard for the first $50 of annual membership, and an additional copy for each $100 beyond this. These standards can be obtained through your company representative. We will be glad to give you his name, if necessary.*

to SPEED building

MODULAR SIZES

—reduce cutting and fitting costs at building site

Now available for clay and concrete masonry units

American Standards now in the modular coordination series:

Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945	**25¢**
Basis for the Coordination of Masonry, A62.2-1945	**25¢**
Sizes of Clay and Concrete Modular Masonry Units, A62.3-1946	**35¢**

(Prepared by Sectional Committee A62, sponsored by the American Institute of Architects and the Producers' Council, with the assistance of the Modular Service Association.)

For complete information on how to design a thoroughly coordinated building, or any product entering into that building, see the new A62 Guide for Modular Coordination **$10.00**

(Prepared by the Modular Service Association under the direction of ASA Committee A62)

American Standards Association

70 East 45th Street New York 17